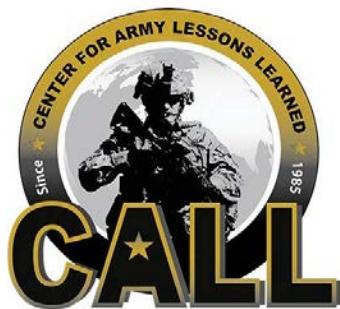


Preparing for Large-Scale Combat Operations



Operations Group,
National Training Center

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National Training Center: Preparing for Large-Scale Combat Operations





Foreword

Training our formations to fight and win is an essential task for every Army unit. As GEN James C. McConville, 40th Chief of Staff of the Army has stated, “When we send the U.S. Army somewhere, we do not go to participate; we do not go to try hard; we go to win. There is no second place or honorable mention in combat.”

GEN Mark A. Milley, 20th Chairman of the Joint Chiefs of Staff, describes the operating environment for future conflicts as a place where Soldiers will struggle just to survive on a battlefield more lethal than anything seen since at least World War II. This is the scenario against which Army commanders at echelon should constantly train their formations for war. Throughout the force; however, we often find unit leaders at the brigade combat team (BCT) level and below struggling to imagine this hyper-competitive operating environment. They are consistently surprised at the tempo, pace, and competitiveness of a rotation at the National Training Center (NTC) in Fort Irwin, CA,—the best-replicated large-scale combat operations (LSCO) environment the Army offers.

The purpose of this handbook is to set forth the “how to fight” concept and commensurate training techniques at echelon that allow units to succeed at the NTC. Units that win routinely exhibit the following four common characteristics:

- **Lethal squads, crews, and platoons that win at the point of contact.** These small units act faster, respond with accurate and deadly force, and report properly after encountering enemy formations and fighting through any one of the eight forms of contact. These actions at the “tip of the spear” create the initial momentum for our organizations.

- **Small units that effectively understand where, how, and when to transition from movement to maneuver to gain positions of advantage over the enemy.** The units do not simply react; they plan for first contact and fight accordingly because repetitive home-station training honed their fundamental skills and allowed them to survive. Well-led, disciplined, and lethal small units have and will always be the foundation for any successful operation.
- **Commanders, at echelon, that personally drive the operations process.** Constantly planning, preparing, and then executing operations—sometimes simultaneously, these commanders and their organizations have well-understood standard operating procedures (SOPs), refined battle drills, and a clear vision for how to fight. These commanders know their organizations, their capabilities, and how they want to “get after it” with their team. They have studied the environment and the enemy in a manner expected of any quality leader. These commanders understand how to sustain momentum and tempo to continue operations.
- **Units that win at the NTC have staffs, at echelon, which can integrate and synchronize the warfighting functions to constantly shape the fight and enable lethal units to win.** These staffs understand their roles and responsibilities, capitalize on well-understood SOPs to streamline operations, and constantly help their commander orchestrate the fight at a pace required by the enemy and the operating environment.

We specifically designed this handbook to help units at echelon understand an operational environment, develop tactics, techniques, and procedures (TTP) for success, and better understand how to train for this environment at home station. By combining the lessons in this handbook with the Army’s current training strategies, units training at home station will arrive at the NTC better prepared to conduct LSCO against a near-peer threat.

As always, Operations Group and the remainder of the NTC team stand ready to assist. Thank you for all that you continue to do for our Army.

Sincerely,



Michael J. Simmering
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Operations Group
The National Training Center & Fort Irwin

The National Training Center

Characteristics of Winning Units

"Highly trained squads and platoons are the foundation of ready units."
– GEN Michael X. Garrett, FORSCOM Commander



- Lethal squads, crews, and platoons win at the point of contact through expert execution of actions on contact, creating initial momentum.
- Squads, crews, and platoons gain positional advantage through mastery of transitions between movement and maneuver.
- Commanders driving the operations process and capitalizing on gains won at the point of contact, sustaining the momentum created by squads, crews, and platoons.
- Staffs integrating and synchronizing warfighting capabilities at echelon shape the fight and enable victory.

"When we send the U.S. Army somewhere, we do not go to participate; we do not go to try hard; we go to win. There is no second place or honorable mention in combat."
– GEN James C. McConville,
40th Chief of Staff of the Army

Figure A. Necessary characteristics for units to succeed at NTC

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SECTION 1

Brigade-Level Operations: Key Implications of Large-Scale Combat Operations



Figure 1-A. Staff rehearsal

CHAPTER 1

Brigade-Level Operations: Key Implications of Large-Scale Combat Operations

How should a brigade combat team (BCT) headquarters (HQ) prepare for large-scale combat operations (LSCO)? One key factor is the relationship between the current BCT design and the warfighting functions (Wffs) it needs to synchronize and integrate.

Within the BCT, maneuver, fires, and sustainment WffFs are represented by purpose-organized battalions (BNs). In contrast, the intelligence, protection, and command and control (C2) WffFs cut across echelons.

- The BCT’s senior military intelligence (MI) officer is usually the BCT S-2, residing in the BCT HQ, but the “conduct information collection” WffF task is split between the cavalry squadron and the brigade engineer BN’s military intelligence company (MICO).
- The primary protection WffF tasks of “coordinate air and missile defense” and “conduct chemical, biological, radiological, and nuclear (CBRN)” reside entirely in the BCT HQ, and to a large degree rely on echelon above brigade (EAB) assets. In LSCO, this is a potentially significant challenge, as BCTs will likely face air, missile, and CBRN threats to a much greater extent than they are currently accustomed.
- The C2 WffF, by definition, synchronizes and converges all BCT tasks and systems, and so runs from the BCT commander and staff through every element of the BCT.

To a greater degree than the maneuver, fires, and sustainment WffFs, oversight of intelligence, protection, and C2 must reside in the BCT, which therefore, has additional responsibility in conceptualizing, prioritizing, and training them.

This chapter is intended to spark initial discussion about these three WffFs within the BCT HQ. Other Operations Group publications have highlighted the three WffFs and will continue to explore them in Operations Group outreach.

INTELLIGENCE TRAINING

Planning horizons and decision cycles are shorter in LSCO than in the counterinsurgency (COIN) operations, which characterized the majority of the conventional Army’s missions for the previous two decades. The peer or near-peer threat associated with LSCO also operates at a higher tempo. The intelligence warfighting function (IWffF) within the BCT must be prepared for the amount of threat information available for collection and processing, and the speed at which it will have to complete the intelligence cycle to inform the BCT commander’s decision making.

The BCT IWfF must be able to complete the intelligence cycle fast enough to drive the operations process.

The BCT IWfF must be able to complete the intelligence cycle fast enough to drive the operations process. Adequate training is vital. Training Circular (TC) 2-19.400, *Military Intelligence Training Strategy* (1 August 2019), provides a framework for commanders to certify the IWfF within the BCT. The BCT S-2 must be an active participant in the development of the MICO training plan and own the certification process for the IWfF as a whole. External organizations such as the division G-2, U.S. Army Training and Doctrine Command (TRADOC) G-2 Operational Environment Center (OEC), Project Foundry 2.0, mission training complexes, and intelligence electronic warfare tactical proficiency trainers (IEWTPTs) are all able to support the BCT with establishing realistic threat scenarios, an exercise control group, opposing forces (OPFORs), and observers for home-station training.

BCT IWfFs must participate in multiple BCT-level training events to develop proficiency and test standard operating procedures (SOPs). The Military Intelligence Training Strategy (MITS) must adhere to the “train as you fight” principle by maximizing the number of collective training events that require the involvement of other Wffs. Systems should be stressed for training in a degraded communications environment.

Preparation for LSCO must also include ensuring BCT IWfF architecture is complete and fully mission capable. In LSCO, the operational environment extends beyond the brigade’s assigned boundaries, reaching through its communications and digital connectivity to other domains and Army, joint, interagency, and multinational elements. BCTs must train on and maintain their organic tactical ground stations, ground control stations, and Trojans (a type of information collection such as human intelligence [HUMINT]) to successfully conduct information collection. Noncommissioned officers (NCOs) within the BCT IWfF must take ownership of the IWfF infrastructure and are essential in developing the load plans and checklists necessary to ensure all equipment, cabling, power sources, and screens make it to the area of operations (AO) in working order. Without this equipment, organic and EAB collection are degraded, in turn, diminishing overall situational awareness.

INFORMATION COLLECTION

The BCT information collection plan in a LSCO environment encompasses the cavalry squadron, organic intelligence, surveillance, and reconnaissance (ISR), attached collection teams, and allocated EAB assets. Table 4-1, Field Manual 3-98, *Reconnaissance and Security Operations* (1 July 2015), lists the available organic reconnaissance, security, and information collection assets within the BCT.¹

Table 1-1. Available reconnaissance and security information collection assets. Source: Field Manual 3-98, Reconnaissance and Security Operations, table 4-1, pg. 4-18, 4-19

Organization	Capability
Cavalry squadron	<ul style="list-style-type: none">• Conducts combined arms, air-ground reconnaissance, and security tasks as needed to meet information requirements.• Conducts area, zone, and route reconnaissance, reconnaissance in force, or reconnaissance as part of a security task.• Conducts area, zone, and route reconnaissance, or reconnaissance in force by fixed- or rotary-wing aircraft in difficult terrain.
Combined arms battalion, Stryker infantry battalion, and infantry battalion	Conducts combined arms and air-ground operations as needed to meet information requirements. These operations include the reconnaissance and security tasks conducted by the battalion scout platoon and providing additional combat power (through task organization) to reinforce the brigade combat team's organic cavalry squadron.
Reconnaissance/attack aviation battalion (attached from combat aviation brigade)	Conducts aerial reconnaissance and security tasks in close coordination with the brigade combat team's cavalry squadron (through task organization).
Military intelligence company	<ul style="list-style-type: none">• Conducts situation development, target development, and support to lethal and nonlethal targeting, indications and warning, assessment, and protection.• Provides the commander and staff members with assessment of enemy capabilities, intentions, and courses of action related to the mission. Disseminates intelligence products throughout the unit and to higher and subordinate headquarters.• Conducts intelligence reach for transmission and receipt of intelligence products across the intelligence enterprise.

Field artillery battalion	Field artillery fire support personnel reports battlefield intelligence and assessment of the effects of fires. Weapons locating radars locate the positions of threat firing elements for engagement.
Brigade support battalion	<ul style="list-style-type: none"> • Provides additional information collected during conduct of primary missions. • Can provide information on types of wounds or injuries, diseases, and the health and welfare of a population that refines understanding of the operational environment or enemy capabilities. • Provides additional information collected during conduct of primary missions.
Engineer company	Conducts Soldier sensor missions as needed to meet information requirements. Terrain and reconnaissance teams identify key terrain, obstacle intelligence, and infrastructure information.
Chemical, biological, radiological, and nuclear platoon	Conducts reconnaissance tasks to detect, identify, mark, report, and sample for the presence of chemical, biological, radiological, and nuclear platoon hazards.

BCT collection managers must fully employ these organic collection capabilities, and not rely heavily on EAB assets to fill information collection gaps. Reliance on EAB assets to fill these gaps is unrealistic. In LSCO, division or higher HQ use these assets to support their respective collection efforts. The BCT collection management element must understand the capabilities of each asset to employ them properly.

Without detailed collection guidance, prioritization, and a latest time information is of value (LTIOV), subordinate units can misunderstand the purpose of given information requirements and develop assessments that do not support BCT decision making. Similarly, all collection assets, whether a maneuver unit or HUMINT collection team (HCT), require time to complete their own operations process, ensuring they are able to fulfill collection requirements in time and space.

The cavalry squadron provides reconnaissance and security that informs the BCT information collection plan. Within the reconnaissance or security phase of an operation, the BCT should support or enable the squadron to conduct these reconnaissance or security tasks with provided collection, along with clear reconnaissance or security guidance. The BCT must also provide clear guidance on the purpose of named areas of interest (NAIs) and

associated specific intelligence reports. If properly supported with planned fires and collection assets, and given time to conduct parallel planning, the squadron can address information gaps concerning terrain, collecting information that might affect friendly forces, the enemy's disposition, and the various courses of action (COAs) the BCT commander might develop during planning.

Raven small unmanned aircraft systems (UASs) are another critical collection asset, which can fill BCT and BN collection gaps. BCTs must enable BN planning and use of Ravens through proper airspace management systems. BCTs must establish a clear process and primary, alternate, contingency, and emergency (PACE) communications for submitting and approving Raven restricted operations zone (ROZ) requests. This SOP must also establish limitations on ROZ sizes, and a clear routing and approval chain within the BCT. The approval chain includes the collection management in the BCT S-2, air defense airspace management/brigade aviation element (ADAM/BAE) cell, and BCT current operations (CUOPS) cell.

Legacy COIN collection strategies can hinder organic HCTs' ability to provide timely HUMINT reporting at pace in LSCO. HCTs positioned in the consolidation and support areas reduce the timeliness and relevance of reporting. HCT placement in LSCO needs to be included in detailed information collection planning so staffs pre-position HCTs in close proximity to key events. This enables the HCTs to report timely and relevant intelligence from detainees, internally displaced persons (IDPs), and possible sources. HUMINT can, in turn, give timely and actionable intelligence on high-payoff targets (HPTs) that can cue other assets to confirm. LSCO also increases the possibility for large numbers of detainees from mass surrender or defection, which could overwhelm the limited number of BCT HUMINT collectors. BCT staffs should consider this in their war gaming and task or task-organize protection assets to assist in management of detainees or IDPs.

AIR DEFENSE

The loss of constant friendly air superiority is arguably a critical difference between the current deployment-related environment and the expected LSCO operating environment.

The loss of constant friendly air superiority is arguably a critical difference between the current deployment-related environment and the expected LSCO operating environment. During LSCO, ground elements can expect peer and near-peer air parity, or sometimes even overmatch. Today's BCTs have minimal practical experience with planning to mitigate significant fixed-wing close air support and rotary-wing (RW) attack assets.

The BCT ADAM/BAE cell possesses a leading role in air defense (AD) planning and execution. Since BCTs do not currently have organic AD capabilities, the cell carries the critical responsibility of coordinating directly with unit leaders from AD elements assigned to support the BCT. The cell should also recommend passive AD measures for BCT elements, which do not receive dedicated AD support.

The ADAM/BAE cell must be able to advise the commander on established engagement criteria to positively identify, report, clear air, and engage with the proper air defense artillery (ADA) system within the BCT's AO. Depending on available assets, the identification and engagement authority for low-level enemy threats may reside at EAB, with the BCT ADAM/BAE cell, or with the AD battery assigned to support the BCT. The cell must clearly understand autonomous engagement criteria, especially if the BCT has personnel trained and certified to use man-portable air defense systems (MANPADSs) such as Stinger missiles. If employed poorly, these systems represent a significant fratricide risk to friendly air assets.

Commanders must direct full BCT staff integration with the ADAM/BAE cell to effectively track and manage friendly air assets. This is especially true if the BCT holds identification and engagement authority against enemy air threats. The ADAM/BAE cell must know the location and activity of all friendly air assets to prevent misidentification and fratricide. A regular airspace working group and an airspace user activities review during staff transitions (for example, a shift change) are key tools for effective airspace management, which enables successful AD.

BCT commanders should ensure their unit establishes a “react to enemy air” battle drill at the BCT staff level and subordinate command posts (CPs). A “react to enemy air” drill includes reporting to higher HQ and using organic weapons systems locally. Reporting by subordinate elements enables the ADAM/BAE cell to battle track patterns. Effective tracking enables the staff to identify opportunities such as finding the location of an enemy forward arming and refueling point (FARP). If the BCT can confirm the location, it can destroy the FARP. The effective use of organic weapons systems is critical, especially for immediate unit survivability. BNs must develop tactics, techniques, and procedures (TTP) to train in employing organic weapons systems (for example, 25-mm caliber) against enemy air platforms, and then report any AD engagements up to the BCT.

CHEMICAL, BIOLOGICAL, RADIOLOGIAL, AND NUCLEAR READINESS

Units that arrive in theater with fully mission capable equipment, a full understanding of CBRN protection, and the ability to share situational understanding on enemy employment of chemical weapons maximize their ability to fight and win in a contaminated environment.

In LSCO, as in the current operational environment, the first step to ensuring CBRN readiness before deployment is maintaining, sustaining, and reporting equipment deficiencies. The next step is proper CBRN equipment training, and the third is training CBRN reporting. Units that arrive in theater with fully mission capable equipment, a full understanding of CBRN protection, and the ability to share situational understanding on enemy employment of chemical weapons maximize their ability to fight and win in a contaminated environment.

Units must properly maintain and account for CBRN equipment. Accurate chemical defense equipment reports allow leaders to understand inadequacies in CBRN equipment readiness. Units should identify critical CBRN assets and track them during unit maintenance meetings in the same manner they would maneuver equipment.

Detection equipment such as the UDR-13, ANVDR-2, joint chemical agent detector (JCAD), and nuclear, biological, and chemical (NBC) reconnaissance vehicles (RVs) allow the BCT to understand and react to the type of contamination faced. UDR-13 and ANVDR-2 detectors provide nuclear and radiological recognition, and the JCAD provides chemical

detection. Units should ensure Soldiers are trained on these critical systems, and their employment is built into unit SOPs and battle drills. Units should recognize the NBC RVs as an information collection platform, emplacing it on NAIs to provide early warning of enemy contamination use.

CBRN threat assessment and planning must be fully incorporated into the mission command operations process. Clean and dirty routes must be generated as part of COA development, war-gamed, incorporated into operational graphics, and included in rehearsal. Training decontamination teams internal to the BCT on equipment such as the M26 pump allows units relief from higher-level imposed mission-oriented protective posture (MOPP) levels, but BCTs must recognize capacity is limited. BCTs and BNs must ensure teams are distributed appropriately considering CBRN threats and expected decontamination points, and resourced with water. Sustainment considerations must also include the evacuation, decontamination, and treatment of contaminated casualties; effective CBRN care is an entire set of collective tasks with its own training and resource requirements. Decision support templates or other CUOPS tools should include triggers for calling forward higher-echelon decontamination support when the threat permits and organic assets have or will culminate.

COMMAND AND CONTROL

Near-peer and peer adversaries in LSCO are capable of jamming and interfering with most communications platforms the Army currently uses. They are able to locate CPs by gathering electronic emissions and identifying concentrated areas of emission. They can spoof or deny global positioning system (GPS) use, which further degrades communications, targeting, and navigation systems. BCTs must mitigate these threats through training on all available communications systems, incorporating communications into a rehearsed PACE plan, and development of emission control (EMCON) and jamming procedures.

Commanders must identify and train their CP personnel as digital crews in accordance with TC 6-0.1, *Mission Command Information System Integration Training and Qualification: Digital Crews* (10 May 2018), to improve the efficiency and effectiveness of their CPs. Each crewmember should be trained on every means of communication, including upper and lower tactical internet (TI) systems, to allow for robust and redundant PACE plans to share information with higher and lower echelons. SOPs must be developed and enforced to streamline processes and information flow between staffs at echelon.

Units must conduct in-depth operator training for all available communications systems to include antenna setup, communications security (COMSEC) requirements, basic troubleshooting, and maintenance procedures. Operators must be aware of the vulnerabilities of each system, how to recognize jamming or interference, and what to do if they suspect jamming or network compromise. Commanders must also enforce regular preventive maintenance checks and services (PMCS) of all communications equipment, including radios, digital systems, and rolling stock. Units should also track critical communications systems, such as joint capabilities release (JCR)/joint battle command platform (JBCP), satellite transportable terminals (STTs), and stack systems in unit maintenance meetings.

As units progress through collective training events such as staff exercises (STAFFEXs), communications exercises (COMMEXs), field training exercises (FTXs), etc., commanders should look to inject jamming or denial scenarios to force their subordinate units and staffs to exercise the unit's PACE plan and reporting processes for suspected jamming incidents in a cyberspace electromagnetic activities (CEMA)-contested environment. Commanders can also exercise the various PACE systems by holding battle rhythm events over different networks and systems until all systems are validated.



Figure 1-1. Establishing communication

Commanders must consider enemy capabilities when developing an effective PACE plan. EMCON standards (for example, short radio transmissions, using the lowest radio power necessary, eliminating unnecessary JCR/JBCP messages, etc.) need to be enforced to reduce risk to the force.² Adversaries are capable of jamming, interfering with, or detecting electronic emissions from our most frequently used systems. Systems such as high frequency (HF), tactical satellite (TACSAT), and high capacity line-of-sight (HCLOS) radios are less vulnerable to jamming. Units that are proficient on these systems not only provide redundancy in their network plan, but also make it more difficult for near-peer adversaries to disrupt communications.

ENDNOTES

1. Field Manual 3-98, *Reconnaissance and Security Operations* (1 July 2015), pg. 4-18, 4-19
2. Army Techniques Publication (ATP) 3-12.3, *Electronic Warfare Techniques* (16 July 2019). Chapter 7 covers electronic protection techniques, including EMCON. Units can apply these techniques across transmitting platforms to include JCR/JBCP.

CHAPTER 2

Command Posts in Large-Scale Combat Operations

Large-scale combat operations (LSCO) increase friendly and enemy tempo, quicken information and decision cycles, and subject formations to higher friendly casualties. During LSCO, our units are under near-constant electronic attack, and often find higher-echelon resources are simply not available. These conditions impede the brigade combat team (BCT) across the entire command and control (C2) warfighting function (WffF). To prepare for LSCO, Army leaders must reframe current notions about command post (CP) operations, roles, and tactics, techniques, and procedures (TTP).

COMMAND POSTS IN THE DECISIVE-ACTION TRAINING ENVIRONMENT: A GLIMPSE OF LARGE-SCALE COMBAT OPERATIONS

Many commanders arrive at the National Training Center (NTC) with a vision for CPs based on the operational experience over the previous 20 years. Tactical operations centers (TOCs) are static fixtures, which provide continuity and a site for the staff to meet and execute the unit's battle rhythm. A vehicle-based tactical command post (TAC) serves as the commander's combat escort, occasional fighting platform, and hasty planning cell, but rarely synchronizes all WffFs as a true C2 node.

Decisive-action training environment (DATE) operations at NTC do not fully replicate the scale, violence, or resource scarcity of LSCO, but create similar challenges in terms of contested domains and the velocity of operations. Commanders struggle to perform their role in the operations process (understand–visualize–describe–direct–lead –assess)¹ and spend a significant amount of time out of communication with higher and lower echelons. Staffs struggle to make sense of the information environment, provide relevant recommendations, and plan in condensed time horizons with incomplete information. Enemy indirect fire, air attack capabilities, and cyber and electronic warfare (EW) threaten friendly CPs and disrupt commanders' ability to exercise C2 for operations.

Where the DATE stresses our C2 paradigms, LSCO shatters them. Every person, node, system, and network will be in the fight, 24 hours of every day and across all domains. To survive, commanders must update their understanding of the role and function of CPs.

DOCTRINE REVIEW: COMMAND POSTS

Commanders cannot exercise C2 alone. Even at the lowest levels, commanders need support to exercise C2. At every echelon of command, each commander has a C2 system to provide that support. The C2 system is the arrangement of people, processes, networks, and CPs that enable commanders to conduct operations.²

Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces* (31 July 2019), defines the CP as a component of the commander's C2 system. "Command posts are facilities that include personnel, processes and procedures, and networks that assist commanders in command and control." They adjust based on the situation "to help control operations through continuity, planning, coordination, and synchronizing of the warfighting functions."³

Army Techniques Publication (ATP) 6-0.5, *Command Post Organization and Operations* (1 March 2017), serves as the "how-to" manual, which covers the various types of CPs, equipment layouts, and security considerations, as well as methods for manning the CP, conducting battle rhythm events, and synchronizing staff functions. Although each type of CP has specific roles and purposes, the following are functions⁴ common to all CPs:

- Conducting knowledge management, information management, and foreign disclosure
- Building and maintaining situational understanding
- Controlling operations
- Assessing operations
- Coordinating with internal and external organizations
- Performing CP administration

At NTC, when CPs displace during the fight, it is common to see staff sections cease all work for up to 24 hours while in transit. This pause is particularly harmful when the BCT planners are unable to execute the military decision-making process (MDMP) and put the BCT behind their already-constrained timeline.

In LSCO, commanders are unable to afford this kind of break in the mission command operations process. CPs need to be survivable, mobile, and capable of performing redundant staff functions. CPs need to maintain multiple forms of communication and an updated, shared common operational picture (COP) that adequately informs the staff and commander.

DOCTRINE REVIEW: TACTICAL COMMAND POSTS AND MOBILE COMMAND GROUPS

Commanders must prepare to exercise C2 over the operation while away from the staff at the main command post (MCP). At the BCT level, in addition to the MCP, doctrine describes the TAC as “a facility containing a tailored portion of a unit headquarters designed to control portions of an operation for a limited time.”⁵

The TAC is not just the commander’s patrol for battlefield circulation. More accurately, it is a localized and impermanent MCP. Doctrine describes the TAC as “tailored” and “for a limited time” to control portions of an operation. The intent is for commanders to construct TACs with specific equipment and personnel to aid C2 in critical situations such as points of decision, friction, or risk. Examples from experience in the DATE, which directly apply to LSCO, include the combined arms breach, during passage of lines, and the decisive point of an attack or defense.

Although only division and corps units are resourced for a true mobile command group (MCG), many BCT commanders at NTC create an MCG in addition to the TACs and MCPs. Typically consisting of one to three combat vehicles, MCGs allow the commander to transit the AO and gain necessary perspective during the fight. MCG use provides opportunity, but also carries risk. In one instance, a BCT commander and S-3 occupied high ground in a single high mobility multipurpose-wheeled vehicle (HMMWV) with a single map board and one frequency modulated (FM) channel to exercise C2 during a brigade attack. The commander possessed an ability to visualize, but severely limited staff input and became cognitively overwhelmed trying to keep track of the fight.

RECOMMENDATIONS FOR BRIGADE COMBAT TEAM COMMAND POST EMPLOYMENT

Commanders must consider how to employ CPs in LSCO, and then man, train, and equip them to adequately support C2 operations. Drawing from experience in the DATE, consider the following recommendations when planning for LSCO:

- **Clarify roles and functions for the command posts.**

Commanders must decide how to exercise C2 over the fight from the MCP and on the move.

- Which COP must each CP update and display? Who will update the map board and the joint battle command platform (JBCP) while the commander is on FM? Successful commanders assign hands-on tasks to staff officers and noncommissioned officers (NCOs) and thereby free themselves to sense the fight and communicate with other commanders.
- When the commander is forward, what are the MCP's responsibilities? During attacks, for example, BCTs often let the executive officer (XO) in the MCP fight the deep fight while the commander orients on the close fight.
- If manning and equipment support deploying an MCG, what comprises the TAC and MCG? One successful unit at NTC used a three-Stryker fighting vehicle element as the MCG and the TAC consisted of an M1087 Expando Van, tactical communications node (TCN)/satellite transportable terminals (STTs) for Warfighter Information Network–Tactical (WIN–T) connectivity, retransmission Stryker, light medium tactical vehicle (LMTV) for equipment, and HMMWV security element. It was functional, mobile, and served as a sufficient alternate CP when needed.

- **Make command posts mobile, survivable, and flexible.**

- In LSCO, CPs must be mobile to survive the threat of enemy air and indirect fire attacks.
- BCTs should strive for breakdown and establishment times of about an hour for MCPs and mere minutes for TACs.

- Units should use terrain and emission control (EMCON) techniques to mask electromagnetic (EM) signals from enemy sensors. **Note:** Generators are one of the largest sources of EM signature.
- **Create redundant communications across command posts.** Units suffer degraded communications in LSCO, to include jammed WIN-T, FM, and JBCP.
 - Rapid displacement, terrain masking, and redundant communications are crucial to maintaining C2.
 - As in the DATE, effective BCTs need a robust primary, alternate, contingency, and emergency (PACE) plan, which includes allowing commanders to jump to alternate CPs that are not under electronic attack.
- **Have a plan for the planners.** BCTs at NTC are often surprised how disruptive it can be to displace a CP. The displacing process routinely takes longer than planned. Units truly feel the impact when staff members are unable to perform key functions including information collection, battle tracking, and planning.
 - Subordinate echelons must understand when the BCT CP is going to jump.
 - Units may move key staff members forward to a new MCP location (for example, via air movement or perhaps with the commander), often already occupied by a quartering party or the TAC. There, they can continue their critical staff function while the main CP is in transit.
- **Leave the main command post.** Commanders must deploy forward to get a better feel for the fight and to visit subordinate commanders.⁶ Commanders must also make sure they maintain full situational understanding.⁷ Commanders must balance the gains of in-person assessment and communication with losing access to the full suite of communication assets, key staff members, and systems, processes, and products.
 - TAC and MCG design, manning, and processes should minimize or mitigate commanders' lack of access to the full suite of communication assets, key staff members, and systems and products to include the full COP.

- Commanders must always consider how their chosen CP benefits and degrades their decision-making ability.
- Commanders must remain cognizant of personal risk. In LSCO, risk probability and severity increase. Commanders who displace from massed artillery fire likely lose some ability to exercise C2 over the fight.

CONCLUSION

ADP 6-0 states, “Command posts provide a physical location for the other three components of a command and control system (people, processes, and networks).”⁸ As such, CPs deserve as much deliberate planning as a combined arms breach or a forward passage of lines.

In LSCO, the enemy targets CPs across all domains and attempts to disrupt the commander’s ability to provide C2 for operations. Units can prepare for this environment by first revisiting doctrine and evolving their understanding of CPs, and then by building CPs to be mobile, redundant, and survivable.

ENDNOTES

1. ADP 6-0, *Mission Command: Command and Control of Army Forces* (31 July 2019), paragraph 2-68
2. Ibid, paragraph 4-1
3. Ibid, paragraph 4-51
4. ATP 6-0.5, *Command Post Organization and Operations* (1 March 2017), paragraph 1-3
5. Ibid, paragraph 1-23
6. ADP 6-0, *Mission Command: Command and Control of Army Forces* (31 July 2019), paragraph 2-60
7. Ibid, 2-62
8. Ibid, 1-106

CHAPTER 3

Fighting for Information: Security and Reconnaissance in Large-Scale Combat Operations

Over the past two decades of fighting counterinsurgencies (COINs) in the Middle East and Central Asia, U.S. commanders typically used cavalry organizations as maneuver battalions (BNs) with assigned areas of operations (AOs). These missions led to a deterioration of our brigade and cavalry organizations' fundamental skills in planning and executing reconnaissance and security operations against a near-peer threat. To understand how to best prepare our units to once again conduct large-scale combat operations (LSCO), we quickly revisit the role of the cavalry, its responsibilities to the brigade, and common trends in its employment in the decisive-action training environment (DATE) at the National Training Center (NTC). This chapter expands on how the squadron interacts with the brigade, and what the squadron must get right during LSCO to allow these roles to be grounded and achievable.

“The fundamental purpose of cavalry is to set conditions for successful operations of the unit for which they are conducting reconnaissance and security tasks.”

—Field Manual 3-98, *Reconnaissance and Security Operations*
(1 July 2015), paragraph 1-5, pg. 1-3

As outlined in Field Manual 3-98, *Reconnaissance and Security Operations* (1 July 2015), pgs. 1-3 to 1-5, the cavalry—

- Enables mission command
- Provides accurate and timely information to the operations process and intelligence collection cycle
- Operates as combined arms air-ground teams
- Provides reaction time and maneuver space

- Preserves combat power and achieves economy of force
- Facilitates movement and transitions
- Fights for information

These seven functions are not mission tasks, but serve to underpin the foundational elements of what a squadron does.

TYPICAL CAVALRY SQUADRON USE IN LARGE-SCALE COMBAT OPERATIONS ENVIRONMENT

Brigades must understand using the cavalry squadron doctrinally is crucial to success in LSCO. Brigades need to employ their cavalry squadrons at the right time, and be focused on reconnaissance and security operations with sufficient enablers to conduct assigned tasks. This provides the brigade valuable intelligence to shape, inform, and influence its scheme of maneuver.

As currently seen at NTC, the cavalry squadron often executes the squadron's internal military decision-making process (MDMP) and troop leading procedures (TLPs) behind the brigade combat team (BCT) instead of conducting it in parallel with the brigade. This is ineffective and would seriously hamper the BCT and squadron in LSCO. The most significant effect is the squadron starts its planning cycle later than it needs to, reducing the squadron's ability to confirm or deny initial planning assumptions, initial priority information requirements, and course-of-action (COA) development. Another important consideration is the amount of tactical risk the squadron assumes rises the longer it waits to initiate movement. With more time to do its job, the squadron is able to assume less risk and provide more data, information, and knowledge for the brigade. Delays in moving the reconnaissance assets forward of the brigade increase assumed risk for squadrons during their missions. The squadron must be its own greatest advocate to seize the initiative in the reconnaissance and security fight.

BCTs in LSCO must provide the squadron a doctrinally appropriate task and purpose. Squadrons are optimized for reconnaissance and security. BCTs, which treat the squadron like another maneuver BN, find themselves forced into decisions to help squadrons as they struggle to attack and defend. In contrast, BCTs, which task the squadron with its doctrinal missions, allow the squadron to shape the BCT battlefield. This issue is not a matter of

simply naming a task; BCTs must avoid assigning zone reconnaissance with objectives, timelines, and asset allocations more typical of a movement to contact. This sort of reconnaissance is risky in a LSCO environment and unlikely to set the conditions for successful operations of the brigade main body.

... commanders need to understand ... they enter a prepared disruption zone...

At the troop level, commanders need to understand that at the start point in a LSCO environment, they enter a prepared disruption zone and are vulnerable to long-range precision antitank (AT) weaponry. If troop commanders become engaged, the squadron likely ceases reconnaissance operations and loses the potential to achieve and capitalize on information collection. Once forward enemy elements have destroyed the cavalry squadron in decisive, direct-fire engagements, the brigade's reconnaissance efforts are essentially complete. Commanders can avoid becoming decisively engaged and support the BCT information collection plan with intelligence preparation of the battlefield (IPB) that considers the probable line of contact (PLC), appropriate movement techniques and fires, incorporation of unmanned aircraft systems (UASs), and appropriate reconnaissance techniques.

SQUADRON AND BRIGADE INTEGRATION FOR PLANNING IN LARGE-SCALE COMBAT OPERATIONS

Collection and collection planning must take place in a collaborative and parallel planning environment between the squadron, adjacent units, and higher headquarters (HQ). In the expected rapid tempo of LSCO, the cavalry squadron's ability to accomplish its doctrinal reconnaissance and security missions is significantly greater with a presence in the brigade-planning cell. Presence in the cell helps brigade planners assign the cavalry squadron sound reconnaissance and security missions in a timely manner, and better poises the squadron to parallel and collaboratively plan its own rapid deployment and operations as outlined in Army Techniques Publication (ATP) 3-20.96, *Cavalry Squadron* (12 May 2016) and Field Manual 3-98. The two commonly executed best practices to provide a squadron presence in the BCT planning cell are a liaison officer (LNO) from the squadron embedded into the brigade plans or participation in the operations and intelligence (O&I) working group.

In general, selecting an LNO must be an investment, not a bill. If the LNO is the primary squadron presence in the planning cell, the importance of the position increases. An effective cavalry squadron LNO is a tactically proficient reconnaissance and security practitioner, mature enough to speak authoritatively as the squadron commander's representative, capable of proactively building relationships with the brigade staff, and capable of pulling information from the brigade staff in a timely manner. To support its LNO, squadrons must establish a complete communication package to enable the LNO to effectively correspond across the squadron's full primary, alternate, contingency, and emergency (PACE) plan. The LNO must also have a vehicle to retain freedom of maneuver. If the brigade main command post (MCP) is displacing, the LNO needs to be able to travel with the brigade tactical command post (TAC) or potentially drop off hard copy or analog products to the squadron MCP.

The BCT O&I working group strives to synchronize collection tasking and assigns assets for collection execution under the supervision and guidance of the brigade S-3. If the squadron participates in the O&I working group as per Field Manual 3-98, squadron participants should include the S-3, S-2, and LNO.¹ This allows the cavalry squadron staff to immediately synchronize reconnaissance and security teaming efforts with the BCT staff, and provides the brigade commander the ability to refine collection guidance and specific reconnaissance and security guidance with the entire team that executes it.



Figure 3-1. Conducting reconnaissance and security

Regardless of the tactics, techniques, and procedures (TTP) selected, collaboration between the brigade and squadron planners gives the squadron the ability to effectively plan within the brigade MDMP cycle. This allows the squadron to advocate for the allocation of assets that enables its information collection plan to support the brigade, and enables the synchronization of assets across the brigade through direct, face-to-face communication. When sequenced correctly, the squadron initiates information collection as or before the brigade enters COA development, allowing the squadron to provide updates to the BCT on options for the BCT main body. As operations continue, squadron planners can help facilitate how the brigade is pulled into the close fight and how the next squadron progresses to support and ease the next brigade transition.

KEYS TO SQUADRON SUCCESS IN THE LARGE-SCALE COMBAT OPERATIONS ENVIRONMENT

Fighting products. Squadron success in any environment begins with a planning process that generates effective orders. The squadron must manage its orders, and in all but the most extreme situations, orders include products. This means a squadron must have an effective planning standard operating procedure (PSOP) that addresses which products are built, how those products are built, and how they are distributed.

ATP 3-20.96 recommends the squadron staff is extremely proficient at creating the following six products in a time-constrained environment: the enemy situation template, information collection plan, directed friendly COA, war-gaming results, synchronization matrix, and operational graphics. This list is not exhaustive or mandatory, but provides a starting point. Whichever products are chosen should be codified in the unit PSOP.

Once deciding on its products, the squadron must have a quick and efficient system to generate them. The staff generates the majority of products during the MDMP. Assigning responsibility and timelines for when those products are created is critical. Product generation must be trained as a battle drill for the field environment.

LSCO presents its most significant challenges to the orders process in distribution. In LSCO, the squadron will likely be highly dispersed, and its communications potentially affected by electronic warfare (EW). This complicates gathering subordinate commanders to a centralized location for an in-person brief, but also may make digital distribution difficult. Physical orders distribution may quickly become the primary distribution method in

Developing systems for digital and analog products, and then training and gaining experience executing both in the field will be critical.

a contested environment. As part of its PACE plan, the squadron must be able to physically distribute analog products (for example, graphics and relevant fighting products) through logistics packages (LOGPACs) or other means. Developing systems for digital and analog products, and then training and gaining experience executing both in the field will be critical.

Current operations in large-scale combat operations. Current operations in LSCO follows the same characteristics and best practices of our current operational environment. Once plans are generated and distributed, they need to be properly managed by the squadron's MCP. This is achieved through effectively delineating roles and responsibilities for personnel in the MCP, developing a battle rhythm, rehearsing and refining battle drills, and establishing a reporting system across the squadron to ensure information is rapidly making its way throughout the formation.

Defining early roles and responsibilities, and deciding how the MCP will be structured and equipped is critical to success. The squadron should then rehearse until everyone can execute during a continuous, 24-hour operations process for extended durations. A squadron well rehearsed on its systems can mitigate leader transition within the MCP through increased organizational knowledge and redundant systems.

Roles and responsibilities are managed over time with battle rhythm. Staffs need a standard for managing shift changes within the squadron MCP. Some units conduct their shift changes as a brief to build shared understanding across all WfFs and commanders during the changeover. Others prefer to let staff proponents manage their schedules internally. Some units stagger their shift changes to allow overlap and maintain continuity throughout a 24-hour period, never relieving all personnel at one given time. All options are viable. Regardless of method, battle update briefs and commander's update briefs serve as a synchronizing function to develop and maintain shared understanding within the command post (CP) and at echelon.

The CP standard operating procedures (SOP) or tactical operations center SOP should highlight battle drills inside the squadron MCP. Battle drills help guide the MCP in its six basic functions. Successful units rehearse these drills repetitively until they are proficient. A well-rehearsed team can receive information, distribute information, analyze information, submit recommendations to the commander, integrate resources, and synchronize information.

Lastly, but critically, the squadron should clearly establish which reports it wants, how it wants them delivered over which medium, and in what frequency. Field Manual 6-99, *U.S. Army Report and Message Formats* (19 August 2013), is a prime starting point. Units are often challenged with tactical reporting. For example, who in a unit is responsible for generating a joint capabilities release (JCR)/joint battle command platform (JBCP) spot report? Is it the scout, platoon leader, troop executive officer (XO), commander, S-2, or battle captain? When contact is received across the entire frontage of the squadron's screen, unstructured reporting over multiple mediums complicates achieving situational understanding for the brigade.

Squadrons build proficiency with mission command systems (MCSs) by repetitively using them during collective training at echelon, capturing lessons learned as robust SOPs.

Communication. Squadrons should communicate across a complex dispersed battlefield and over varying terrain in LSCO. This requires effective communication across the entire range and capacity of upper and lower tactical internet (TI) systems. Squadrons build proficiency with mission command systems (MCSs) by repetitively using them during collective training at echelon, capturing lessons learned as robust SOPs.

Squadron proficiency in its MCSs and beyond line-of-sight (BLOS) communication equipment is imperative. The squadron should train MCS operators on system employment to enable Army Battle Command Systems (ABCSSs) integration. At a minimum, the squadron should have a primary and alternate ABCS trainer. The S-3 section must have several mission command digital master gunners (MCDMGs) and the S-6 should have at

least one signal-digital master gunner (S-DMG). This enables squadrons to integrate their ABCSs such as command post of the future (CPOF), Force XXI Battle Command, brigade and below (FBCB2), Advanced Field Artillery Tactical Data System (AFATDS), and One System Remote Video Terminal (OSRVT).

Current line-of-sight (LOS) equipment and FBCB2 platforms are easily jammed and exploited by adversaries. High frequency (HF) radios have not been well resourced or trained in recent years, but HF has the following unique advantages that can significantly expand the squadron's communication capabilities:

- It is not easily jammed.
- It can be used where satellite communication is not available.
- Terrain obstruction is not a limiting factor.
- It can communicate to ranges of 4,000 kilometers and beyond.

Squadrons fielded with the Warfighter Information Network–Tactical Increment-2 (WIN-T INC 2) can provide on-the-move communications, mission command, and situational awareness to commanders needed to lead from anywhere on the battlefield. With the WIN-T INC 2, squadrons can expand their LOS capability by tapping to the combat net radio (CNR) gateway through the retransmission team's Soldier network extension (SNE). This enables the retransmission teams to extend frequency modulated (FM) communications through upper TI (via satellite). The prerequisites are for the retransmission teams to be within LOS of the troops and tactical communications node (TCN) at the squadron MCP to be operational and able to receive the signal. Squadrons that can fully integrate and use their WIN-T INC 2 benefit from a reliable and secure network expansion that is not limited by terrain or distance.

As in the current operational environment, squadron signal officers (S-6) must understand the concept of operations and collaborate during COA development. For each phase of the operation, the S-6 must provide PACE plans that are feasible, suitable, acceptable, distinguishable, and complete² to maintain communications with higher and lower HQ and enable each WfF. This is accomplished by painstakingly patching and certifying MCSs and operators, validating and certifying retransmission teams in accordance

with Training Circular (TC) 6-02.1, *The United States Army Signal Corps 2019 Training Strategy* (11 July 2019), and training and certifying operators on LOS and BLOS equipment. Squadrons must test, path, and exercise all of their MCSs and platforms. Squadrons that track the maintenance status of their MCSs and platforms are positioned to manage risk to mission.

Task force scout integration. In LSCO, task-organization may change rapidly. Habitual, personality-based relationships are not sufficient to integrate combined arms BN task force (TF) scouts with the cavalry squadron. To ensure BCT and BN reconnaissance and security objectives are achieved regardless of the friendly order of battle, each TF scout platoon and each cavalry troop must be able to work together interchangeably. Although outside the scope of this chapter, to prepare for LSCO, units ideally should strive for common reconnaissance and security SOPs and TTP.

The cavalry squadron and TF scouts should overlap training opportunities whenever possible.

The cavalry squadron and TF scouts should overlap training opportunities whenever possible. The squadron must include TF scouts in every available collective training opportunity, professional development opportunity, tabletop exercise, and SOP production and validation exercise. This relationship allows the squadron and TF scouts to develop a thorough understanding of organizational capabilities and the role each organization plays in matching those capabilities against information collection requirements.

Inclusion into squadron collective training and a complementary brigade SOP development provides the cavalry squadron and TF scouts the ability to effectively conduct operations critical to brigade success, including reconnaissance handover (RHO) and passage of lines. Coordination and planning conducted in training enable elements from different HQ to streamline execution by relying on developed and practiced SOPs that cover communications PACE plans, recognition signals, fratricide mitigation, and leader responsibilities. This working relationship must be carried into planning and rehearsals to facilitate transitions and allow units to proactively deconflict potential issues. Unpracticed units waste time at the point of execution, cede advantage to the enemy, and potentially squander opportunities for the brigade.

Casualty evacuation. Medical evacuation (MEDEVAC) is difficult for a cavalry squadron because it does not have a clear line from point of injury to role 1 or role 2, but instead has to navigate through the protected forces behind the squadron. Because of the squadron's geographic distribution, the squadron aid station (SAS) may not be the closest role 1 to the casualty. Time and distance to move casualties can vary significantly across the squadron, creating an additional friction point.

LSCO may further compound these challenges with higher casualties and a contested air domain, which does not permit air MEDEVAC. This would increase the squadron's reliance on other aid stations within the brigade and stress the squadron medical officer (MEDO) to coordinate, plan, and brief adjacent unit support.

An accurate medical common operational picture (MEDCOP) shared across the squadron allows the MEDO and troop commanders to get their casualties to the nearest role 1. The MEDCOP is a living document developed by the brigade's medical operations team through bottom-up refinement and should be disseminated across the squadron at least twice per day as well as when there are any changes to the MEDCOP. There is not a doctrinal standard for what a MEDCOP should contain; however, at a minimum, the MEDCOP should include all roles of medical support by type and location, aerial threat rings, and ambulance exchange point (AXP) locations and activating conditions (triggers).

As with squadron operations in any environment, it is imperative the MEDO be involved in the overall planning of the squadron. In turn, the MEDO should understand the maneuver plan in depth to properly account for the employment of the squadron's assets and coordination with adjacent units. In LSCO, the MEDO must coordinate with the squadron's chemical, biological, radiological, and nuclear (CBRN) officer to properly account for the treatment of contaminated patients across the squadron's broad frontage, and with the other BN's decontamination points.

To support the high operational tempo of a LSCO environment, the SAS can split into Alpha (A) and Bravo (B) treatment teams (commonly labeled as the main aid station [MAS] and forward aid station [FAS]). Depending on the concept, splitting teams allows the aid station to maintain continuous coverage or to cover a wider frontage. Communication capability between



Figure 3-2. Loading an MEV

the MAS and FAS, class VIII cross load, estimated expenditure and resupply, CBRN threat, medical evacuation vehicle (MEV) maintenance status, and distribution, as well as the amount of time split, should all be considered when planning split operations. Stryker brigade combat teams (SBCTs) must also consider requesting an additional direct-support MEV from the brigade support battalion (BSB) to maintain effective patient transport capabilities from role 1 to role 2 during the split.

Sustainment. Sustaining the squadron in LSCO hinges on covering long distances for resupply operations, communicating logistical requirements, and executing maintenance as quickly and efficiently as possible. Even under lower-scale operations, the squadron's line of communications (LOCs) are typically longer than the rest of the brigade, creating unique challenges.

LSCO strains the squadron's ability to conduct ground resupply. Consequently, the squadron must ensure a fully capable and functional field trains command post (FTCP). The squadron should prepare to routinely lose communication with the BSB because of distance or enemy EW, and its operations may be out of sync with the rest of the BCT. This friction increases the squadron's requirement to ensure its leaders in the FTCP understand squadron intent, keep the BSB aware of squadron operations and requirements, and communicate BSB planning factors to the BSB.

To support longer LOCs, the squadron may consider requesting the deployment of a BSB forward logistics element (FLE). A BSB FLE keeps commodities forward of the brigade support area (BSA), cutting down on unit and supply-point distribution time. In addition to the FLE, BSB's Alpha (A) Company can task-organize elements of its transportation platoon to provide direct support in the form of a logistics release point (LRP) to the line troops. During periods of high-volume resupply operations, direct support from BSB's Alpha (A) Company allows the forward support troop distribution platoon to maintain its equipment, plan for future operations (FUOPS), and incorporate rest cycles.

The squadron may find it can maintain classes of supply forward during extended LSCO using caches. Ammunition, 5-gallon water cans, and meals, ready to eat (MREs) are typical commodities resupplied using caches.

Consider using a cache when logistics planners understand when and where a troop remains static at certain positions on the battlefield. Logistics planners can employ a cache in a location near a troop who is static, conducting a screen, and needs a particular commodity such as an MRE.

The squadron and BSB may overcome long LOCs with aerial resupply when friendly forces control the air domain. Training aerial resupply at home station and familiarizing the distribution platoon with aviators are prerequisites.

CONCLUSION

Cavalry squadrons tasked in a cavalry role that crosses the line of departure (LD) as soon as possible allow their brigade commanders to make decisions from a position of advantage. The cavalry squadron can be a force multiplier that provides a unique capability to its BCT as an all-weather ground force reconnaissance element.

The cavalry squadron must develop interoperability across the brigade. It cannot expect to deploy to a LSCO environment and excel without practiced SOPs for parallel planning and interoperability, exercised in home-station training.

To make cavalry squadrons effective, especially under the pressures of LSCO, brigade and squadron staff members must be integrated to allow the squadron to fully develop the situation and assist in transitioning the brigade for follow-on operations. The cavalry squadron must develop interoperability across the brigade. It cannot expect to deploy to a LSCO environment and excel without practiced SOPs for parallel planning and interoperability, exercised in home-station training.

ENDNOTES

1. See Field Manual 3-98, *Reconnaissance and Security Operations* (1 July 2015), paragraph 4-109 for the full list.
2. Field Manual 6-02, *Signal Support to Operations* (13 September 2019), paragraph 1-52

SECTION 2

Movement and Maneuver: Getting to the Point of Contact



Figure 2-A. Engaging the enemy at the point of contact

CHAPTER 4

Movement and Maneuver during Large-Scale Combat Operations: Critical Offensive Considerations at the Battalion Level and Below

INTRODUCTION

In large-scale combat operations (LSCO), our units attack into the teeth of peer or near-peer defenses. Battles stress warfighting functions (Wffs) at all echelons. To succeed, we must prepare for an enemy that fights harder and earlier, incorporates chemical, biological, radiological, and nuclear (CBRN) operations, contests the air domain, and makes greater demands of our command posts (CPs) and communications than which we are currently accustomed.

PROBABLE LINE OF CONTACT: TRANSITIONING FROM MOVEMENT TO MANEUVER

The greater lethality of peer and near-peer threats demands our units win at initial contact.

The greater lethality of peer and near-peer threats demands our units win at initial contact. This further increases the importance of intelligence analysis, to include understanding key high-threat weapons systems and the probable line of contact (PLC). A PLC is “a general trace delineating the locations where friendly and enemy forces are (likely to become) engaged.”¹ Leaders from the small-unit level to the brigade combat team (BCT) headquarters (HQ) must understand the PLC, and set conditions for combat before they cross it.



**Figure 4-1.
Destroying the enemy by winning during initial contact**

The PLC is not a doctrinal output of intelligence preparation of the battlefield (IPB), but instead generates from the situation template, which includes maximum engagement lines, and the event template, which includes threat decision points.² Readers unfamiliar with the PLC may recognize its analogue in counterinsurgency (COIN)-era pre-mission briefs. During the COIN-focused era, units excelled at gathering, fusing, and disseminating multi-source intelligence to ultimately show small units the

location of potential improvised explosive devices (IEDs) and ambushes. Planning for the PLC is conceptually the same. In LSCO, the IED or ambush translates directly to the enemy weapons system (most notably, antitank [AT] missiles) that disables or destroys friendly combat power before it reaches the objective.

In LSCO, units must use the PLC to synchronize assets before contact. For example, a battalion (BN) might direct companies to fly Raven small unmanned aircraft systems (UASs) one intervisibility line before reaching the PLC, observing named areas of interest (NAIs) before making contact. Meanwhile, BN scouts short of the PLC might call indirect fire to suppress enemy locations and support friendly maneuver with obscuration. Attacking infantry companies may drop dismounts before crossing the PLC, denying the enemy the ability to mass fires on mounted platforms. Dismounted infantry forces then seize complex terrain, finding and neutralizing the enemy.

As units set conditions before making contact, armored formations transition to maneuver and attack across the PLC in bounding overwatch. Doctrinally, a unit “transitions from troop movement to maneuver once it crosses the (line of departure) LD.”³ The LD and the PLC should roughly coincide, unless the tactical situation indicates the LD must be elsewhere.⁴

Maneuver BNs training at the National Training Center (NTC) sometimes fixate on their assigned objectives and fail to plan for a potential enemy short of or beyond the objective.

Recognizing the enemy’s scheme of maneuver may be more complex than simply fighting at a templated objective is vital. Maneuver BNs training at the National Training Center (NTC) sometimes fixate on their assigned objectives and fail to plan for a potential enemy short of or beyond the objective. Units that do not consider enemy reconnaissance and security elements when assessing the PLC find their small units inadvertently bypass these enemy forces, often while still in vulnerable movement formations. In LSCO, these enemy formations include AT positions and mounted and dismounted observation posts (OPs) hidden in key and/or complex terrain. Failing to delineate the correct PLC exposes close combat elements to flanking fire, decimating their combat power long before approaching the objective.

BATTALION SUSTAINMENT IN THE OFFENSE

Armored brigade combat team (ABCT) and Stryker brigade combat team (SBCT) maneuver BNs in LSCO tend to stretch line of communications (LOCs) quickly. Longer LOCs complicate the entire sustainment enterprise. Proper preparation, training, and planning can overcome much of this friction.

SUSTAINMENT UNDER LARGE-SCALE COMBAT OPERATIONS

Small units must create load plans that reduce the burden on the distribution system as much as possible.

Small units must create load plans that reduce the burden on the distribution system as much as possible. SBCT companies have the capability to be “self-sustained for up to 72 hours of continuous operations.”⁵ ABCT platforms have the capability to carry enough class I and V to be self-sufficient for lengthy periods, but need regular resupply of class III to maintain combat operations. In the COIN era, the predominant means of supply distribution was supply-point distribution out of established bases and outposts, which “requires unit representatives to pick up their supplies.”⁶ However, in LSCO offensive operations, supply-point distribution does not keep entire BNs resupplied. In fact, as LOCs stretch and subordinate units disperse in accordance with operation plans (OPLANs), unit distribution, a “method of distributing supplies by which the receiving unit is issued supplies in its own area, with transportation furnished by the issuing agency,”⁷ is the only effective method of distribution.

In all LSCO scenarios, unit leaders need to be aware that the volume of enemy contact and limited stocks of critical supplies require prioritization and higher HQ-imposed limits in the form of controlled supply rates (CSRs). This is especially true for class V. Proper engagement criteria and accurate consumption reporting of items such as Javelin missiles, mortar ammunition, and main battle tank rounds are crucial to ensuring units conserve critical resources and convey the appropriate demand signals to the Army. The limits imposed by long-lead considerations directly and indirectly affect BCTs and BNs tasked with fighting.

Units also need to recognize mortuary affairs (MA) capabilities are limited. Most BCT-level MA elements can handle approximately 20 deceased Soldiers per day. As such, rates of friendly forces killed in action (KIA) will likely exceed the capacity of the MA system. Therefore, units should consider what they could do at their level to consolidate KIAs and mark them for collection and processing after winning during initial contact.

The single most critical BN-level sustainment action is arguably the accurate and timely reporting of logistics status (LOGSTAT) reports and consumption reports. Even in our current operational environment, company- and below-level leaders often do not understand the criticality of timely and accurate LOGSTAT reporting. LSCO pressure increases the problems created by poor LOGSTAT reporting. Inaccurate or delayed reports waste valuable time and resources; a distribution element moving forward with too much or too little information risks critical assets and Soldiers unnecessarily. Combined with longer LOCs and a potentially broader battlefield, misallocating resources at the BN level may create BCT-level risk. Accurate LOGSTAT reporting must be taught, practiced, and enforced at home station.

MEDICAL CONSIDERATIONS

Medical plans for BNs in LSCO must achieve three basic goals: provide immediate life-saving self and buddy aid (treatment), provide medical assets as far forward as possible (command and control [C2]), and mass tactical evacuation (TACEVAC) (including medical evacuation [MEDEVAC] and casualty evacuation [CASEVAC]) capabilities. LSCO often precludes rapid evacuation because of the contested air domain, longer ground LOCs, and a more lethal enemy. Therefore, units must properly plan, prepare, and coordinate the entire medical system from individual skills to BN-level collective tasks to be successful.

As in the current operational environment, effective and immediate life-saving self and buddy aid requires training to standard at home station. Sustainment training is also key; a combat lifesaver (CLS) course and similar classes teach immediate life-saving skills, but as with any other skill, they atrophy if not practiced.

Medical C2 requires decisions to support maneuver companies without accepting too much risk to medical assets. Timely TACEVAC to the next echelon of medical care presents risk, especially in the offense as LOCs stretch. To address these concerns, company-level leaders, in coordination

with medical leaders at the BN level, must plan and prepare to conduct CASEVAC operations back to the role 1 without attached medical assets. Conversely, leaders at the BN level should consider the costs and benefits of attaching MEDEVAC assets to the companies to assist in treatment and evacuation.

Leaders at the BN level must consider preplanned jumps of the role 1 to reduce travel time from the forward line of own troops (FLOT) back to role 1, have contingency plans in place in case casualties are taken during a role 1 jump, and delegate authority to jump to the medical platoon leader as necessary if the operational situation deviates from the plan. Use of the different forms of role 1 setup (including tailgate, hasty, and full) is crucial for the role 1 to be able to maintain mobility, proximity, and continuity of care. Practicing bounding medical coverage via split capability is an effective tactic, technique, and procedure (TTP) to maintain proximity while the BN is actively treating and evacuating casualties to the role 1. Treatment team B (forward aid station [FAS]) jumps to the next templated role 1 location while treatment team A (main aid station [MAS]) continues to treat and evacuate to the next echelon of care. Once the FAS is established and receiving patients, the MAS jumps forward to reestablish the battalion aid station (BAS). The split capability is not a TTP for prolonged use, but allows the BN to push medical capability forward without losing continuity of care.⁸

Positioning medical assets as far forward as the tactical situation allows is a crucial step in saving lives in a LSCO fight. Mass casualty (MASCAL)-producing events in LSCO are the norm and overwhelms standard TACEVAC capabilities. Therefore, units can expect patients to exceed their “golden hour,” the one-hour evacuation to higher care standard that became the norm during COIN-focused operations. Options for prolonged field care allow for casualty treatment and stabilization at the lowest level until evacuation is possible. At the BN level and below, the U.S. Army Medical Center of Excellence is moving forward with enhanced medic training, additional equipment such as blood transfusion kits, additional medical evacuation vehicles (MEVs) for SBCTs, and initiatives such as “mobile medic,” a telehealth system that can communicate with other echelons of care while monitoring a patient. All of these initiatives are in development, but not yet fielded; as a result, until units are capable of prolonged field care, they must address the use and massing of TACEVAC capability.

BN planners must consider the consolidation of TACEVAC assets at a central location or ambulance release point (ARP) to surge capabilities forward when required. For example, a BN tasked with breaching an obstacle and securing complex urban terrain, will likely experience a MASCAL event at the breach and within the foothold in the urban area. BN and BCT plans should account for this and have appropriate TACEVAC assets staged in an ARP one or two intravenous (IV) lines away from the breach so they can rapidly respond to the company casualty collection point (CCP) and move casualties to the appropriate echelon of care.

Alternatively, the BN FAS can move into the foothold on the heels of the lead combat elements. In this model, the FAS establishes triage, treatment, and stabilization at the foothold until the situation permits the movement of TACEVAC platforms through the breach.

As discussed in the next section, medical leaders in BNs must prepare for a CBRN environment and should have standard operating procedures (SOPs) and training in place to conduct patient decontamination operations.

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR DEFENSE PREPAREDNESS

In LSCO, units must be prepared to continue offensive operations while under CBRN attack. An untrained unit that pauses and struggles to effectively maintain operational tempo in the face of a CBRN attack becomes even more vulnerable to the enemy.



Figure 4-2. A Soldier unprepared for CBRN operations absorbs the full effects of a replicated chemical agent (CS gas) at NTC.

Before crossing the LD, BNs must determine the appropriate mission-oriented protective posture (MOPP) level based on accurate intelligence analysis. An accurate MOPP level prior to departure allows an already semi-protected unit to get into the proper posture more quickly and resume operations rapidly. As such, individual CBRN defense competence is the most critical aspect of a unit's readiness to continue operations. Units must train on the individual CBRN tasks outlined in Soldier Training Publication (STP) 21-1-SMCT, *Soldier's Manual of Common Tasks, Warrior Skills, Level 1* (7 November 2019) consistently to ensure units can operate effectively in a CBRN environment. Most importantly, personnel must know how to assume MOPP (level) 4 correctly and rapidly to protect the force and enable operational continuity.

At the small-unit level, select personnel must train to correctly use joint chemical agent detectors (JCADs) and/or M256 kits to determine the type of agent present, its persistency, and to create a CBRN-1 report to send up the chain of command. Accurate detection enables commanders to decide when to downgrade protective postures and if or when decontamination operations should commence. If facing a nonpersistent agent in LSCO, units should continue operations and wait for the threat to dissipate. If the agent is persistent, the commander may choose to decontaminate personnel and equipment when the tactical situation permits.

Decontamination operations must be planned at the BN and BCT level. BNs must be aware their organic decontamination capabilities are finite and limited, and that they will likely require support if the CBRN attack affects large elements. In LSCO, BCTs will likely receive an attached decontamination company to fill gaps in organic capabilities. Both echelons must plan decontamination operations with clean water being the critical limiting factor. In extremis, a forward support company's (FSC's) or brigade support battalion's (BSB's) water buffaloes and other water transport equipment may be used. However, this equipment has limited capacity and once used in a decontamination role, units must clean and inspect them before holding potable drinking water again.

As a corollary, LSCO demands units plan and prepare for patient decontamination. Units must establish clean and dirty routes to and from the patient decontamination location, whether or not operational decontamination is also being conducted. The BN CBRN officer and the medical officer (MEDO) jointly contribute to this plan. Although operational decontamination assets are not specifically designated to decontaminate patients, they can be used in that role if necessary.

AIR DEFENSE

In LSCO, “dominance of the air cannot be assumed.”⁹ Units must alter their worldview and security posture to include “looking up.” Army forces can expect the air situation to “range from no control, to a parity … situation … to local air superiority in a specific area, to air supremacy over the entire operational area.”¹⁰ Therefore, units must train and prepare to defend themselves from enemy air assets that range from small UASs, rotary-wing (RW) attack aviation, and fixed-wing aviation platforms.

Units must designate and train air guards at echelon and in every moving element to scan for enemy aircraft.

Maneuver BNs can expect to attach and work with short-range air defense (AD) systems. These critical assets should be employed in accordance with the BCT’s overall AD plan, be dispersed to provide coverage over elements on the defended asset list, maximize the area covered, and have interlocking fields of fire to increase the probability of neutralizing air threats. Units must designate and train air guards at echelon and in every moving element to scan for enemy aircraft. Units must ensure air guards have access to communications systems to rapidly report the presence of enemy air threats across the force. Even though dedicated AD Soldiers are not on current BCT modified table of organization and equipment (MTOE), every formation (including HQ and sustainment elements) should resource and train shoulder-launched AD missile (Stinger) teams. BN-level planners should also keep in mind their organic heavy machine guns, Bradley fighting vehicle (BFV) 25-mm chain guns, and Javelin systems are fully capable of conducting AD. Training at home station should include virtual or simulated air engagements with these systems. For planning and preparation, it may be useful to identify vehicles, weapons systems, and operators tasked specifically with using them in an AD role.

BNs should expect to integrate with their BCT’s overall AD C2 scheme. However, in the absence of a BCT air defense artillery (ADA) C2 plan, BNs should consider creating an Air Guard Net that allows instantaneous communication between AD assets. An Air Guard Net is useful in coordinating for multi-angle and volley fire techniques to neutralize enemy

air threats. Because BNs are limited in the number of nets to prioritize for retransmission, BN-level commanders and planners must conduct the proper IPB and threat analysis to determine if employing an Air Guard Net should be prioritized.

In addition to these active assets, planners and commanders must also train and implement passive AD measures.¹¹ Passive AD involves positioning, dispersion, hardening of positions, camouflage, cover, and protection.

COMMAND POSTS AND COMMAND AND CONTROL

Given the expected scale of LSCO offensive operations, BNs must have CP and C2 plans that account for the likelihood that maneuver elements move beyond conventional single-channel ground and airborne radio system (SINCGARS) frequency modulation (FM) radio range.

BN primary, alternate, contingency, and emergency (PACE) communications plans must cover a varying range of systems to be as redundant and effective as possible. BNs should also consider determining multiple PACE plans, segregated by reporting requirement or WfF. For example, the operational/maneuver PACE plan may prioritize SINCGARSSs, followed by high frequency (HF) radios, and then move to joint capabilities release (JCR)/joint battle command platform (JBCP) systems. However, the logistics PACE plan may be exactly the opposite; because of the high volume of information required in LOGSTAT, maintenance, and consumption reports, it may be appropriate to prioritize JCR/JBC-P first, and then move to FM reporting on the administration and logistics net.

Retransmission teams must train and be equipped to properly conduct terrain analysis and maintain their communications systems. BN planners must place them to maximize radio retransmission, and be able to make recommendations on displacement when communications become degraded; BN S-6s should not be the only ones planning retransmission; S-2s and S-3s must provide input like any other shaping effort. BNs should also train and equip company-level leaders to establish hasty retransmission nodes with any vehicle that has two radios to provide in extremis retransmission from company trains or another forward node.

HF radios are an underused capability, which augments and sometimes replaces SINCGARS radios. Inherently long range, secure, and resilient in the face of electronic warfare (EW), HF radios are ideally suited to enable communications in LSCO. There are generally limited HF radios available to maneuver BNs, so planners must ensure their proper distribution to enable effective C2. Units must train regularly on the

use of HF radio systems since their operation and maintenance is more involved than standard SINCGARS radios. HF radio training must include wave propagation theory, antenna theory, and other concepts critical for effective use. For HF radios to be truly effective, the BCT must develop and implement the HF radio network across the formation. Although a BN has the capability to implement its own network, doing so isolates the network and precludes communication with the BCT or sister BNs.

The high tempo of LSCO dictates main command post (MCP) displacement must be carefully synchronized with the maneuver plan so critical capabilities are not lost during periods when they are most necessary.

The high tempo of LSCO dictates main command post (MCP) displacement must be carefully synchronized with the maneuver plan so critical capabilities are not lost during periods when they are most necessary. For example, the Advanced Field Artillery Tactical Data System (AFATDS) is critical for fire support, but maneuver BNs only have a single system under current MTOE. Adding to the complexity, the system is best used operating from the halt and on a Warfighter Information Network–Tactical (WIN–T) network.

Experience in the current operational environment shows enemy forces couple EW assets with artillery to ruthlessly target our C2 nodes. In LSCO, units can expect the same high-threat environment for CPs at all echelons. To survive and operate, BNs must begin by having a general understanding of each C2 node's and system's electromagnetic (EM) signature. A fully established BN MCP, with multiple generators, amplified SINCGARS nets, satellite communications, and the range of WIN–T equipment has an enormous EM signature. An MCP intentionally established with purely analog capability may be less effective, but significantly more survivable. BNs must balance survivability and effective C2 by choosing when, where, and how often to operate the systems in their C2 nodes. Depending on the tactical situation, simply establishing a C2 node full time may not be viable. To ensure C2 node survival, commanders and staffs must be ready to execute operations with degraded capabilities and breaks in communication.

To facilitate C2 node flexibility, units must synchronize deployment of the tactical command post (TAC) to the same degree as the MCP. An additional consideration when planning for the BN TAC are its manpower requirements, which “come out of hide.” BNs are not currently resourced to run full-time TACs, and are usually led by the S-3 “with representatives from S-2, S-3, and fires cell sections.”¹² This means extended TAC deployments have a cost; with key players physically separated from the MCP, planning for future operations (FUOPS) and general situational awareness of the status of all Wff suffers.

Regardless of how often or for how long the TAC deploys forward, BN planners and commanders must establish which roles and responsibilities each C2 node assumes beyond the baseline roles and responsibilities referenced in Army Techniques Publication (ATP) 3-90.5, *Combined Arms Battalion* (5 February 2016), and ATP 6-0.5, *Command Post Organization and Operations* (1 March 2017). Units must balance their personnel, systems, and mission requirements; ultimately, what matters is units clearly communicate, train, and practice the various roles of CPs and how they interact.

Lastly, units must plan for and synchronize the combat trains command post (CTCP), unit maintenance collection point, role 1, and FSC locations and displacements. Occasionally during LSCO, the FLOT quickly moves forward, outpacing the capabilities of these key nodes to support the BN. Initial positioning close to the FLOT and deliberate transition points to jump these nodes forward allows units to maintain necessary fighting capability.

CONCLUSION

LSCO are usually lethal, fast-paced, and stress systems far more than many units expect.

LSCO are usually lethal, fast-paced, and stress systems far more than many units expect. Fighting in LSCO begins with a stark assessment of enemy capabilities and an understanding of where enemy forces begin to achieve effects, and with which weapons systems, to include chemical weapons and air assets. Units must also recognize the scale and scope of casualties and equipment damage and destruction in LSCO. An ill-prepared unit that has not trained on individual and collective tasks across all WfFs struggles to survive, much less succeed and win.

ENDNOTES

1. Field Manual 1-02.1, *Operational Terms* (21 November 2019), pg. 1-64
2. ATP 2-01.3, *Intelligence Preparation of the Battlefield* (1 March 2019)
3. ATP 3-90.1, *Armor and Mechanized Infantry Company Team* (27 January 2016), paragraph 2-168
4. Ibid, paragraph 2-129
5. ATP 3-21.21, *SBCT Infantry Battalion* (18 March 2016), paragraph 1-56
6. Outdated ATP 4-90, *Brigade Support Battalion* (18 June 2020), pg. 1-4
7. Field Manual 4-40, *Quartermaster Operations* (22 October 2013), pg. 2-2
8. ATP 4-02.3, *Army Health System Support to Maneuver Forces* (9 June 2014), reference defines “treatment team A” and “treatment team B” as the doctrinally correct terms for split medical capabilities and does not reference FAS or MAS as doctrinal verbiage. ATP 3-90.5, *Combined Arms Battalion* (5 February 2016), and ATP 3-21.20, *Infantry Battalion* (28 December 2017), are consistent with ATP 4-02.3. However, ATP 3-21.21, *SBCT Infantry Battalion* (18 March 2016), references FAS and MAS in lieu of treatment team A and treatment team B. Both doctrinally correct and common terms are used here to ease understanding.
9. Joint Publication (JP) 3-30, *Joint Air Operations* (25 July 2019), paragraph 1.c
10. Ibid
11. ATP 3-01.8, *Techniques for Combined Arms for Air Defense* (29 July 2016), chapter 3-4
12. ATP 3-90.5, *Combined Arms Battalion* (5 February 2016), paragraph 2-24

CHAPTER 5

Combined Arms Breaches in Large-Scale Combat Operations

“Leaders must recognize that the hard-won wisdom of the Iraq and Afghanistan wars is important to retain but does not fully square with the exponential lethality, hyperactive chaos, and accelerated tempo of the multi-domain battlefield when facing a peer or near-peer adversary.”¹

—Retired LTG Michael Lundy,
Former Combined Arms Center Commanding General

Seizing the initiative requires commanders to take action, often in the form of corps- and division-led offensive operations designed to destroy or dislocate the enemy.

By publishing Field Manual 3-0, *Operations* (6 October 2017), the Department of the Army (DA) signaled a paradigm shift in its role as a unified action partner in large-scale combat operations (LSCO). The manual explains that successful unified land operations require Army forces to seize, retain, and exploit the initiative by forcing an enemy to respond to friendly action.² Seizing the initiative requires commanders to take action, often in the form of corps- and division-led offensive operations designed to destroy or dislocate the enemy. To counter this action, enemy forces attempt to disrupt and slow friendly forces by tying together obstacles, fighting positions, and terrain, thereby forming a defense in depth. Friendly forces must be prepared to provide assured mobility through these defensive belts to maintain momentum and keep enemy forces off balance.

This chapter emphasizes critical planning factors across the warfighting functions (WffFs) to prepare units to breach under these conditions.

Army Techniques Publication (ATP) 3-90.4, *Combined Arms Mobility* (8 March 2016), describes assured mobility as “a framework—of processes, actions, and capabilities—that assures the ability of a force to deploy, move, and maneuver where and when desired, to achieve the commander’s intent.”³ A series of fundamentals (including prediction, detection, prevention, avoidance, neutralization, and protection) exists within this construct that enable friendly forces to maneuver. This chapter focuses on neutralization of a mined-wire obstacle belt, arguably one the most complex tasks a brigade combat team (BCT) may execute. It involves mitigating the enemy’s direct fire, indirect fire, electronic warfare (EW), attack aviation, and chemical, biological, radiological, and nuclear (CBRN) effects. This chapter emphasizes critical planning factors across the warfighting functions (WffFs) to prepare units to breach under these conditions.

Maneuver commanders bear the responsibility for training their formations to execute combined arms breaching. Training and evaluation outlines (T&EOs) for Stryker brigade combat teams (SBCTs) and armored brigade combat teams (ABCTs) list the combined arms breach as a supporting collective task to the mission-essential task (MET) of “conduct an attack.” Although some commanders regard this task as the brigade engineer’s responsibility, combined arms breaches occur under the control of the maneuver commander. Thus, maneuver commanders and their staffs must be prepared to plan and execute breaching operations. The following breaching tenets are a logical starting point for any staff effort:

- intelligence
- breaching fundamentals
- breaching organization
- flexibility
- mass
- synchronization

PICKING UP THE RED PEN



Figure 5-1.

Soldiers provide intelligence information on enemy obstacles.

The **intelligence** breaching tenet establishes the framework for all follow-on planning efforts. For commanders to task-organize their formations effectively or to plan for branch plans that may occur, they must first understand the enemy, terrain, and weather situation in the breach area. This starts with developing a comprehensive enemy event template, which includes obstacle intelligence. Obstacle intelligence includes elements of information concerning the obstacle composition by type of obstacle, including minefield density for mined obstacles, dimensions of the obstacle with grid locations for start points, end points, and tentative points of breach, and some form of imagery.

The brigade engineer battalion (BEB) S-2 section generally lacks direct control over collection assets. Most collection capabilities reside with the BCT or in the cavalry squadron. Given the importance of understanding the composition and location of obstacles, commanders tasked to execute a combined arms breach should leverage a significant portion of available assets to answer information requirements. Although prior conflicts created staffs accustomed to ubiquitous unmanned aerial vehicle (UAV) coverage, enemy air defense (AD) capabilities may limit UAV employment in LSCO. Additionally, if contested across the space domain, geospatial intelligence (GEOINT) support may be limited to support strategic requirements elsewhere in the joint operational area (JOA). The BCT may need to leverage the capabilities of the cavalry squadron, human intelligence (HUMINT), and engineer reconnaissance teams (ERTs) to provide obstacle intelligence.

Detailed preparations are required to successfully employ ERTs. As described in ATP 3-34.81, *Engineer Reconnaissance* (1 March 2016), selecting Soldiers to form an ERT requires a demonstrated ability to use measuring equipment to collect technical information, operate communications equipment, and provide obstacle intelligence reports.⁴ Commanders should ensure ERTs and supported reconnaissance elements train together at home station to build habitual relationships.

The decision to employ ERTs comes at a cost of personnel. The BEB sapper company's modified table of organization and equipment (MTOE) does not include an ERT. When selecting personnel for an ERT, the most obvious choice is the route clearance platoon (RCP) in Bravo (B) Company of the BEB. During LSCO, against a near-peer threat, the RCP will likely secure routes tying the consolidation area/support area to the close area. At the risk of exposing these routes to attack from special-purpose forces, insurgent forces, or other malign actors, commanders can choose to form ERTs from the RCP. Additionally, the RCP option provides the BEB commander the ability to support multiple ERT missions without losing any breach capability from organic sapper platoons.

GETTING TO THE FIGHT

The **breaching organization** breaching tenet identifies which friendly forces comprise the support, breach, and assault forces. Effective staffs use the reverse breach planning process outlined in ATP 3-90.4 and carefully consider the need to build redundancy into the plan. Redundancy, in this case, not only applies to the formations tasked to execute the operation, but also to critical pieces of equipment. Effective combined arms breaches require working equipment, so success starts with supervised and regularly occurring operator-level maintenance. This activity becomes even more important when freedom of action within a JOA cannot be guaranteed and supply lines are threatened. Executive officers (XOs) should identify low-density, long-lead time parts which are mission critical to breach-specific vehicles (M1150 Assault Breacher Vehicle [ABV], M58 Mine-Clearing Line Charge [MICLIC], D6/D7 Dozer, and M1132 Engineer Squad Vehicle). To decrease reliance on supply support activity (SSA), shop stock should be on hand to rapidly repair these critical pieces of equipment.

Task-organization requirements necessitate command and support relationship changes to provide maneuver task forces (TFs) with appropriate combat power. To account for these changes, forward support companies (FSCs) must prepare to receive sustainment assets that arrive to support the maneuver TF's engineer attachments. The FSCs should develop an

attachment checklist that includes receiving all battle rosters, integration into resupply operations, (including timelines and procedures) and incorporating additional maintenance assets into the unit maintenance collection point. Additionally, the TF S-4 should discuss unique requirements with attachment leaders and accordingly recommend changes to the concept of sustainment.

Planners must also carefully consider the ammunition requirements needed to achieve suppression and obscuration.⁵ This applies to cannon-fired artillery and other means of suppression and obscuration. Instead of artillery-fired obscurants, the operation may require use of TF mortars, smoke pots, and smoke grenades to achieve effective obscuration.⁶ The TF XO must be aware of statuses on ammunition ordering, receiving, and distributing. The XO should also implement reporting requirements from the TF staff to confirm receipt of the correct amount and type of ammunition. If timelines for ammunition upload begin to slip, the staff must inform the XO so they can coordinate with the BCT XO and S-4 to pull an emergency class V (ammunition) package from the brigade support battalion's (BSB's) ammunition transfer holding point.

The TF S-4 and FSC commander should consider planning a refuel on the move (ROM) before initiating suppressive fires to prevent the TF from culminating early. The purpose of a ROM is to provide fuel and extend the reach of maneuver forces when complete refueling operations are not practical.⁷ Given a near-peer threat with ground moving target indicator (GMTI) radar capabilities, enemy integrated fires commands (IFCs) will likely attempt to target concentrations of vehicles at templated distances beyond the line of contact. Planners should select a ROM site that provides adequate standoff for sustainment elements from direct- and indirect-fire weapons systems. Of note, the need for protection competes against the requirement to extend operational reach as far as possible for the TF. Planners should consider the trafficability of the ROM site to ensure all equipment that delivers and receives fuel can operate within the selected location. To further reduce the risk of losing critical sustainment assets, ROM operations require efficient execution and predetermined amounts of time for fueling. Planners should calculate how long each combat vehicle receives fuel using the rate of flow of each fueler and the fuel capacity of each piece of equipment. To further improve efficiency, the TF should rehearse the ROM, especially if executed under limited visibility conditions, and discuss planned communications methods and markings.

PROTECTING THE FORCE

To prevent friendly forces from engaging defending ground forces, enemy commanders may seek to employ chemical weapons. Recent conflicts in Syria highlight the threat posed by CBRN weapons. BCTs employ active and passive CBRN defense measures to maintain operational momentum and protect critical assets. BCT active defense measures center around the ability to mass fires or air support to destroy CBRN-capable artillery or munitions before delivery.⁸ Passive defense includes the activities and equipment required to avoid CBRN threats by detecting and adjusting personnel protective measures, and decontamination.

ABCTs and SBCTs contain one CBRN reconnaissance platoon consisting of three M1135 nuclear, biological, and chemical (NBC) reconnaissance vehicles (RVs). When determining where to locate the CBRN reconnaissance platoon, planners should consider where the enemy is most likely to employ CBRN munitions and highlight risk decisions to commanders regarding shortfalls on the defended asset list. The M1135 NBC RV is equipped to perform CBRN reconnaissance and identify hazards at range to correctly classify the type and persistency of hazards. Additional augmentation may include a hazard response company. The company consists of an additional CBRN reconnaissance platoon and two hazard assessment platoons, capable of executing dismounted CBRN reconnaissance and decontamination operations. Organic assets within a maneuver TF include the M26 Joint Service Transportable Decontamination System to assist in operational decontamination, individual protective equipment (IPE), and organic CBRN detection equipment.⁹

Enemy forces employ CBRN effects via artillery, missile, or aircraft to achieve surprise and to disrupt (nonpersistent agents) or block (persistent agents) friendly avenues of approach along pieces of key terrain.

Enemy forces employ CBRN effects via artillery, missile, or aircraft to achieve surprise and to disrupt (nonpersistent agents) or block (persistent agents) friendly avenues of approach along pieces of key terrain.¹⁰ During breaching operations, the enemy seeks to employ nonpersistent agents against targets, typically key terrain, that disrupt a maneuver favorable to the attack or terrain required to further exploit as part of a counterattack. Enemy forces use persistent agents to deny main supply routes (MSRs) for sustainment or reserve elements, or to block an avenue of approach that

cannot be easily defended.¹¹ Understanding which type of agent the enemy is likely to employ drives staff actions to protect friendly forces against a strike. The S-2, CBRN officer, and fire support officer (FSO) identify the likely means of delivery and target areas for an enemy CBRN attack. The S-2 and CBRN officer determine if weather conditions are favorable for CBRN employment since wind speeds, relative humidity, and temperature influence the effectiveness of chemical attacks.

To assist the BCT's active CBRN defense measures, the S-2, with input from the FSO and CBRN officer, provide recommendations for the high-payoff target list (HPTL). The TF should assign named areas of interest (NAIs) to the CBRN reconnaissance platoons. These platoons gain contact within templated enemy CBRN targets and confirm or deny the presence of CBRN threats. The CBRN officer also recommends the mission-oriented protective posture (MOPP) level and identifies potential operational (TF level) and thorough (BCT level) decontamination points. This requires the staff to coordinate for additional enablers: engineer assets for digging contamination runoff control, and sustainment assets to move bulk water to support decontamination and class II (IPE) resupply. The staff identifies clean and dirty routes to each templated decontamination point and annotates them on the common operational picture (COP). The CBRN officer and medical officer (MEDO) coordinate during this step of planning to identify the clean and dirty aid stations, and ensure dissemination of clean and dirty routes to both.¹²

FIGHTING WITH FIRES



Figure 5-2. Clearing an enemy's obstacle

Many leaders are familiar with how to operationalize the **breaching fundamentals** breaching tenet of suppress, obscure, secure, reduce, and assault (SOSRA) as a framework for a combined arms breach. However, the nature of LSCO and requirement for ad-hoc task-organization changes generate friction that may prevent the TF from executing breaching operations in a synchronized manner. By incorporating flexibility into operation plans (OPLANs), friendly forces can rapidly overcome the inevitable friction associated with such a complex operation.

Fires, as a critical piece of the combined arms fight, must develop a plan that incorporates flexibility to meet the commander's intent. This flexibility comes in many forms: redundancy in observation posts (OPs), use of alternative forms of observation (such as radar or UAV), and use of all lethal and nonlethal fires to maintain tempo. The use of unobserved fires may be higher than with which we are currently comfortable. Planners should incorporate targets based on enemy courses of action (COAs) and create options in the fires plan that support the commander's decision points. The TF staff should consider the actions that inform those decision points: friendly/enemy attrition, commitment of friendly/enemy forces along alternate avenues of approach, and the ability to bypass the obstacle belt. The S-2 should also assess whether or not the fire support plan is robust enough to effectively support friendly forces during COA development.¹³

During breaching operations, commanders must mass the effects of overwhelming combat power against selected portions of enemy forces with an intensity the enemy cannot match.

During breaching operations, commanders must mass the effects of overwhelming combat power against selected portions of enemy forces with an intensity the enemy cannot match. To achieve mass, commanders seek to create cumulative, synergistic effects at a specific point on the battlefield. This involves the delivery of direct and indirect fires in concert with one another that enable maneuver forces to rapidly move to the designated point of breach, reduce the obstacle, and assault far-side objectives. In practice, this requires the fire support planner to concentrate their available resources at designated points in the operation: suppression and obscuration fires timed to augment direct-fire suppression and mortar-delivered smoke.

TF staff synchronization during planning remains a paramount concern for the XO, who must ensure the FSO and S-2 coordinate iteratively. The FSO relies on enemy and terrain information to develop an effective fires plan while the S-2 needs the FSO to help attrit enemy forces and gather information to answer information requirements for the commander. The FSO and TF engineer develop the fires plan with particular attention paid to specific events. The triggers must be clear for movement into OPs, initiation and ceasing of suppression and obscuration fires, and echeloning indirect fires systems.

To effectively tie the **flexibility, mass, and synchronization** breaching tenets together, the FSO must create plans with functional fire support coordination measures (FSCMs), which fit into two categories: restrictive and permissive, and both should be used to create the effects needed to support the commander's intent.¹⁴ The use of restrictive measures such as air coordination areas for Army attack aviation, and restrictive fire areas over population centers, prevent fire on areas or friendly elements. Permissive measures allow the free application of fires into areas such as those with coordinated fire lines (CFLs) and fire support coordination lines (FSCLs). Planners should draw these measures during COA analysis since the war game reveals potential avenues of approach for friendly and enemy forces.¹⁵ FSCMs aid in synchronizing and massing fires while enabling friendly forces to visualize how the fires plan supports the breaching operation.



Figure 5-3. Breaching operations rehearsal

Units should incorporate the aforementioned planning considerations into rehearsals to provide responsive lethal and nonlethal fires. Timeliness issues normally involve a failure at one of the nodes in the sensor-to-shooter chain. Technical and/or tactical rehearsals usually identify these problems. At home station, fire supporters should participate in the military decision-making process (MDMP) for combat scenarios in the form of battalion (BN) or brigade training events. These events allow fire supporters to build rapport with the TF staff and gain a better understanding of how the supported commander intends to employ fires. To measure synchronization and mass, the FSO should create quantitative and qualitative measurements of effectiveness before executing the plan. The FSO should measure enemy rates of fire with and without suppression, the size of effective smokescreen versus size of point of breach, and the volume of fire of expected (or known) enemy locations. The training allows the FSO to provide valuable feedback to the field artillery (FA) BN on the effectiveness of specific rates of fire and whether observer teams require additional training.

KEEPING IT ALL UNDER CONTROL

As described in Field Manual 6-02, *Signal Support to Operations* (13 September 2019), LSCO are inherently mobile and require friendly forces to operate at distance, away from command posts (CPs).¹⁶ This characteristic of LSCO highlights the need for detailed and redundant command and control (C2) planning. Four of the primary C2 considerations for breaching operations include retransmission planning in coordination with the observer plan, net management for voice communication, use of procedure words (prowords), and delineating responsibilities between CPs. Effective breaching operations capitalize on accurate and timely communication of key information to inform commanders and their staffs. Whether before, during, or after the breaching operation, signal support enables friendly forces to synchronize efforts and mass effects.

Distance from CPs and between elements means retransmission planning is crucial.¹⁷ The S-6 develops the retransmission plan in conjunction with the staff. At a minimum, it should account for command voice, fires voice, and fires digital nets. The fires digital net is critical because it serves as an alternative means to process fire missions in case enemy action denies upper tactical internet (TI) capability. The retransmission plan needs to support the sensor-to-shooter chain. The S-6 should consider OP locations and the requirement to provide fires voice communications between OPs and the next node in the sensor-to-shooter chain. A failure by the TF XO to synchronize the S-6 and FSO could lead to significant delays in providing lethal fires.

The S-6 must also develop a voice communication plan to facilitate rapid, simple information sharing, especially among lower-echelon units that lack access to data-driven networks.¹⁸ This plan should include a timeline for the occupation of retransmission sites and a detailed communications exercise (COMMEX) between CPs, the support force, breach force, and assault force. Redundancy is critical when planning the voice communication plan and should include all available high frequency (HF), very high frequency (VHF) and ultrahigh frequency (UHF) tactical radio platforms. Additionally, by varying the platforms across the electromagnetic spectrum (EMS), friendly forces decrease the likelihood enemy EW systems will identify and target their location.¹⁹ Failure to develop a robust, redundant voice communication plan could contribute to a loss of momentum during breaching operations when synchronization and tempo are most required.

To further improve chances for successful breaching, all participating forces should use common terms. The TF executing the breach will contain elements not normally assigned to the controlling HQ. Commanders should establish specific, measurable benchmarks to denote what they mean by “suppress” and “obscure.” For example, smoke fired at targets fails to sufficiently describe the conditions that correlate to key calls. Instead, commanders should specify that obscuration is effective when the smoke prevents enemy forces from observing the breach force as they approach the point of breach from their assault position. Whether using prowords (for example, “first down” to signify suppression achieved and trigger the breach force to move to the point of breach) or calling events as they occur (for example, “lane marked and proofed” to trigger the assault force to move through the lane), the key calls must be rehearsed and understood by all participating forces. During preparation activities, the commander should specify the responsibility for reporting key calls. By doing so, units maintain tempo during breaching operations by limiting the chances of prematurely committing breach or assault forces because of errant reporting.

To enable adequate control of the operation, the TF XO should identify the location and responsibility for the CPs. Commanders and key staff members must be able to see the battlefield to make accurate and timely decisions. Additionally, leaders must be located to control critical events such as ensuring effective suppression.²⁰ Commanders must weigh their desire to personally influence critical events with the need to track the overall progress of the operation. Effective CP management involves the tactical command post (TAC) controlling direct fires and maneuver while the main command post (MCP) controls indirect fire, information collection, battle tracking, and reporting. If nothing else, the TAC should focus on controlling the decisive operation to ensure friendly forces maintain the necessary mass, tempo, and synchronization required to overwhelm enemy forces.

TAKEAWAY FOR CONTINUED DISCUSSION

Combined arms breaching operations executed within the context of LSCO present a monumental challenge to commanders and staffs. Lethal battlefields, contested control over domains, and the speed of information create nightmarish conditions for this type of complex operation. Yet, it is possible to achieve the decisive outcome corps and divisions require of BCTs to win in large-scale ground combat. By focusing on fundamental requirements, at echelon, units can achieve mastery over their assigned METs. This begins with commanders that drive the operations process by providing specific and timely intent to their staffs and subordinate commanders. In turn, each WFF lead must understand its impact on the operation and how to support the commander's requirements. Leader development and staff training exercises should focus on discussing the framework for breaching operations and draw heavily from doctrinal references such as ATP 3-90.4. Best practices, such as those in this chapter, are more appropriate for audiences that already demonstrate an understanding of how to organize for and execute combined arms breaches. The U.S. Army's National Training Center (NTC) stands ready to provide the ideal operational training environment, world-class opposing forces (OPFORs), and experienced observer coach/trainers (OC/Ts) to prepare units for success.

ENDNOTES

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CHAPTER 6

Dismounted Operations

Armored infantry primarily “orient on the advance and protection of the main battle tank.” Regular infantry mutually support armored formations and create initial penetrations for tanks. Light infantry “hold critical chokepoints in smaller, more rugged areas within schemes that are made up primarily of heavier forces.”

—Retired BG Huba Wass de Czege,
“Infantry Magazine”
Three Kinds of Infantry

INTRODUCTION

In large-scale combat operations (LSCO), dismounted operations are paramount for brigade combat teams (BCTs) to preserve combat power, seize key and complex terrain to allow mounted maneuver, protect the flanks of armored forces, and seize and retain urban areas. Armored brigade combat teams (ABCTs), Stryker brigade combat teams (SBCTs), and infantry brigade combat teams (IBCTs) differ in capacity, capabilities, and missions, but the role of dismounted infantry is key throughout. Mutual support and synchronization between dismounted and mounted forces is critical to ensure overall success.

INTEGRATING TRANSITION FROM MOVEMENT TO MANEUVER

Doctrinally, infantry can dismount short of, on, or beyond the objective.¹ In LSCO operations, particularly in complex terrain, dismounted infantry are likely to deploy on the approach to create what retired BG Huba Wass de Czege described as “initial penetration to break armor formations free.”² In other words, dismounted infantry will deploy before crossing the probable line of contact (PLC) as mitigation for threats to the mounted force.³

Regardless of where elements dismount, they then seize key and complex terrain, clear defiles of potential enemy observation posts (OPs) and anti-armor teams, establish OPs to call for indirect fire, and establish friendly anti-armor positions to protect the flanks of mounted elements.

... when properly planned, integrated, and synchronized, units can use dismounted forces to maintain a steady, relentless, 24/7 tempo while presenting multiple dilemmas to the enemy along the entire friendly axis of advance.

Dismounting is an integral part of transition from movement to maneuver. It might slow down the tempo of a unit, but it is necessary to survive first contact during LSCO. Despite additional time requirements, when properly planned, integrated, and synchronized, units can use dismounted forces to maintain a steady, relentless, 24/7 tempo while presenting multiple dilemmas to the enemy along the entire friendly axis of advance. Ensuring dismounted and mounted forces synchronize their movements to be mutually supporting is critical to establishing tempo.

DEFILE DRILL CONSIDERATIONS

One technique for accomplishing this synchronization is for units to conduct a defile drill. Crossing a defile can be understood as a mounted and dismounted variation of the “bounding overwatch” movement technique.⁴ When conducted correctly, dismounted infantry move ahead or to the flanks of mounted elements and clear or seize known or suspected potential enemy defilade locations.



Figure 6-1.
Soldier launching small unmanned aircraft system

In LSCO, advanced enemy direct-fire antitank (AT) weapons systems in defilade threaten mounted maneuver at range—currently up to 5 kilometers, and potentially further as AT systems continue to develop. Battalions (BNs), companies, and platoons must plan for these extended ranges by creating plans that allow time and space for dismounted infantry to approach and clear terrain, use obscuration fires or terrain to deny the enemy observation, or use other risk-mitigation measures to dismount the infantry closer to defiles. Other risk mitigation measures may include use of company-level small unmanned aircraft systems (UASs) to conduct initial reconnaissance of defiles; other tactics, techniques and procedures (TTP) to enable dismounted maneuver may include other reconnaissance assets such as the BN's scout platoon or higher-echelon information collection.

While dismounted infantry approach the defile, BNs and companies must plan for their mounted elements to overwatch their movement and provide support. SBCT company Stryker fighting vehicles can overwatch while their organic 120-mm mortar systems can provide obscuration and suppression fires. ABCT company/companies teams can provide direct-fire support from their Bradley fighting vehicles (BFVs) and main battle tanks, and provide indirect-fire support through the BN's mortar platoon or the BCT's artillery assets.

Once a defile has been cleared or seized, the dismounted infantry can secure that terrain and bound mounted elements forward. Once mounted forces are set, dismounted infantry can once again push forward to clear the next defile. As with the decision to dismount forces, the defile drill is slow and deliberate, sacrificing speed. However, it can maintain tempo with the ultimate goal of conserving enough combat power to get to the objective and achieve the mission.

COMPLEX TERRAIN CONSIDERATIONS

Complex terrain is “a geographical area consisting of an urban center larger than a village and/or of two or more types of restrictive terrain or environmental conditions occupying the same space.”⁵ In LSCO, complex terrain is where threat forces generally place their reconnaissance and disruption forces. Because the enemy can use it in this manner, it is worth considering whether a specific piece of complex terrain is also key terrain, or “any locality or area, the seizure or retention of which affords a marked advantage to either combatant.”⁶ Maneuver BNs confronted with key terrain and unable to bypass it must have a plan to clear or seize it, requiring dismounted infantry.



Figure 6-2. Dismounted infantry conduct reconnaissance.

Dismounted infantry should approach complex terrain during periods of limited visibility, supported by BN-shaping operations such as intelligence collection, direct and indirect fires, and obscuration. Sustainment of dismounted forces is a special consideration for BNs; Soldier load planning and standards are critical to ensuring dismounted infantry reach their objectives with enough stamina and supplies to accomplish their missions. Prioritizing class I, V, and VIII (evacuation devices) over creature comforts (for example, full sleep systems/cold weather gear when the environment does not demand it) is a best practice. Dismounted infantry should carry enough supplies to operate independently for 48 to 72 hours. Planners should consider using aerial resupply techniques to sustain the dismounted force for longer periods if the air threat assessment allows for the use of aerial platforms.

Casualty evacuation (CASEVAC) is challenging during dismounted operations. By definition, complex terrain is difficult for wheeled and tracked vehicles to traverse effectively. Planners and small-unit leaders must ensure dismounted infantry prepare for prolonged field care and are equipped with lightweight folding litters, SKEDCOs, and similar

equipment. Planners and small-unit leaders may consider air evacuation methods to get casualties back to higher levels of care as long as the air threat is permissive enough to land helicopters. Small-unit leaders also must understand that until complex terrain is cleared or seized, it may be too high risk for a vehicle or aircraft to approach their location. Infantry often must first achieve their mission before evacuating their casualties.

Once complex terrain is cleared or seized, commanders and staffs should consider whether it is advantageous to retain it in support of further maneuver or a defense. Dismounted infantry with AT weapons systems and forward observers can provide early warning of enemy movements, report enemy locations, secure the flanks of the unit, and call for indirect fire in support of the remainder of the unit.

URBAN OPERATIONS CONSIDERATIONS



Figure 6-3.
Dismounted infantry clear an urban area.

Urban operations are a subset of operations in complex terrain, which include some unique considerations.

Urban operations are likely on LSCO battlefields. They may also “consume much [of the BN’s] combat power.”⁷ Enemy forces defending from urban areas in LSCO will likely take measures to fortify the outskirts of the urban area, emplace key weapons systems inside the urban area, and be ready to disrupt any attempts to breach the outer defenses. Even approaching urban areas likely requires a combined arms breach. Units therefore need to synchronize all warfighting functions (WffFs) to ensure there is enough suppression, obscuration, and maneuver support (breaching assets) to fight through enemy engagement areas and obstacle belts.

As in other complex terrain, dismounted infantry play a key role. Dismounts can approach the obstacle, and in coordination with reconnaissance elements, identify and secure the near side of potential breach lanes. They can also assist in calling for suppression and obscuration fires, and should identify and suppress enemy forces inside the urban area with direct fires while other forces breach obstacles.

Until units achieve an adequate foothold in the urban objective, it is inadvisable for them to move mounted platforms through an urban perimeter breach lane because a vehicle immobilized inside the breach by enemy weapons can have immediate, catastrophic effects on an entire unit. Dismounted infantry are the best option to gain a foothold on the far side and secure the breach before significant amounts of vehicles can move through.

Once inside the urban area, dismounted/mounted teaming and communication are vital to maintaining momentum. At the squad/platoon/crew level, marking systems for rooms and buildings clearance must be established and well rehearsed. BCTs should consider standardizing these marking systems across the formation to enhance its effectiveness. Solid communication between dismounted forces and the supporting combat vehicles is vital, and units must practice communication regularly. Planning and preparation is also critical. Urban objectives in LSCO exceed company and BN capacity so units must establish direct-fire control measures and plans for passage in advance of operations.



Figure 6-4. Providing cover fire during urban operations

Dismounted infantry should seek to employ support from mounted support-by-fire assets from Strykers, BFVs, and main battle tanks. Dismounted forces must be aware of their position relative to firing vehicles; urban objectives can push dismounted forces dangerously close to mounted forces, and urban construction can magnify blast pressure and surface danger zones. Mounted forces should not remain stationary for too long in urban areas because urban terrain provides opportunities and concealment for the enemy to reposition AT weapons.

Similar to the previously mentioned complex terrain, evacuating casualties on urban objectives is difficult. Until units clear urban areas of enemy forces, the BN or brigade's tactical evacuation (TACEVAC) assets are generally not advised to move into the urban area. Effective prolonged field care and dismounted evacuation techniques are critical to achieving responsive treatment and evacuation. Dismounted infantry small-unit leaders must consider using combat vehicle platforms to conduct CASEVAC to the casualty collection point (CCP) when other (nonarmored) TACEVAC platforms can receive the casualties for further evacuation to higher levels of care. Positioning the CCP on the near side of the perimeter breach is a best practice.

Mass casualty (MASCAL) scenarios are likely during urban operations. The BN and BCT must plan for this eventuality and coordinate for the consolidation of MASCAL-supporting CASEVAC assets one or two intervisibility lines away from the breach. Once casualties consolidate at the CCP on the near side of the breach and enough combat power is inside the urban area, these consolidated CASEVAC platforms can move to the CCP to pick up casualties to bring them to the role 1 or role 2 as the situation dictates.

PLANNING CONSIDERATIONS

In LSCO, as in the current operational environment, dismounted infantry move slower than mounted forces. Units can plan for dismounted movement under periods of limited visibility and over relatively flat terrain to progress at 1-2 kilometers per hour. As terrain becomes complex and as the likelihood of enemy contact gets higher, march rates can be as low as 0.5 kilometers per hour. Planners must consider these movement rates to ensure WFFs remain synchronized.

Risk to forces increase when dismounted infantry operate ahead of sustainment and medical systems' reach. Units can mitigate this risk with proper training, planning, and preparation. Dismounted infantry must be properly trained and conditioned for long-range movements. Planners must conduct thorough intelligence preparation of the battlefield (IPB) and plan for reconnaissance, fires, and other support to dismounted elements. Logisticians and small-unit leaders must prepare by planning for contingencies, properly equipping dismounted forces at the start of operations, and sustaining as far forward as possible to shorten line of communications (LOCs).

CONCLUSION

In LSCO, commanders choose to deploy dismounted infantry to mitigate risk to the overall mission. Dismounted infantry are a critical enabler to ensure mounted forces retain combat power by seizing key/complex terrain, securing flanks, and clearing urban centers. If properly planned and executed, dismounted operations can keep enemy forces off balance and unable to execute their planned schemes of maneuver. Dismounted operations assist the unit in gaining and maintaining contact, and shape the battlefield to friendly forces' advantage, thereby allowing BCTs to retain the initiative and overwhelm enemy forces. If properly conducted, the risk of dismounted operations is worth the reward.

ENDNOTES

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CHAPTER 7

Movement and Maneuver during Large-Scale Combat Operations: Critical Defensive Considerations at the Battalion Level and Below

“Prepare for the unknown by studying how others in the past have coped with the unforeseeable and the unpredictable.”

—GEN George S. Patton

Our historical experiences in LSCO suggests that while the scope and scale of the defense will change, its characteristics will remain the same.

The Army describes large-scale combat operations (LSCO) as more intense, complex, chaotic, violent, exhausting, and uncertain than combat the Army has experienced in recent decades.¹ LSCO consists of fighting a near-peer threat on a division and corps level under rapidly changing conditions. Battalion (BN) and brigade combat team (BCT) LSCO defense are especially challenging because plans and decisions tie into much higher echelons than we are used to for other operations. As Army Chief of Staff GEN James McConville has stated, “Soldiers who have been in the Army less than 18 years do not know what large-scale combat operations entail.”² Our historical experiences in LSCO suggests that while the scope and scale of the defense will change, its characteristics will remain the same. When preparing for LSCO, we believe transitions, engineer integration, fires, and sustainment deserve special attention.

TRANSITIONS

The operating environment continuously changes in LSCO and units may have to transition operations quickly. Units are vulnerable during transitions, and commanders must establish clear conditions for execution to account for this vulnerability.³ Defensive transitions typically require more time than enemy forces permit. Unit combat power following an attack is regularly degraded, dispersed, and extended. Units must also confront the psychological effects of shifting from taking the fight to the enemy to defending—sometimes desperately—under new and often unfavorable terms.⁴



Figure 7-1.
Destroying the enemy by winning during initial contact

As a unit transitions from the attack into the defense, one of its first tasks is to establish a security area. Units must understand how the security area could be affected by adjacent units operating throughout the area of operations (AO). If a BN is responsible for securing itself, its scout platoon should conduct a planned and resourced screen.

Incorporating a line company into a security mission can provide additional depth and potentially allow the unit to conduct a guard; a commander's intent and end state determine the nature and extent of required augmentation.⁵ Planners and security element leaders must recognize executing the unit screen may complicate participation in rehearsals. At a minimum, staff members must communicate to the security element any changes and refinements to the plan after rehearsals.



Figure 7-2. Static defensive position

The likelihood of defending against a peer threat with advanced long-range fires in LSCO increases the risk of exposure to chemical munitions. Because of the static nature of defensive positions, defending units are more vulnerable to chemical, biological, radiological, and nuclear (CBRN) threats and hazards. Commanders must plan to employ CBRN reconnaissance and surveillance elements with the security element to assist the security element with determining the status (clear or contaminated) of passage lanes, which redundantly support the withdrawal of a security force or forward movement of the counterattack.⁶

Before companies set into defensive positions and engineers put blades in the ground or send sappers forward, commanders at echelon must issue specific guidance. Guidance should include higher headquarters (HQ) intent, unit intent for obstacles, named areas of interest (NAIs) and target areas of interest (TAIs) for collection assets, likely enemy avenues of approach, reconnaissance guidance, and the anticipated duration of the mission.⁷ Once the commander issues guidance, it is up to the staff members in the main command post (MCP) to conduct the military decision-making process (MDMP) and provide recommendations to the commander. A thorough understanding of the collective scheme of maneuver and adjacent unit crosstalk is central to ensuring there are no gaps the enemy can exploit to get into the BCT's support area.

ENGINEER CONSIDERATIONS

During the defense, engineers shape the battlefield following the priorities of the commander.⁸ Time is a critical component during a defense because large obstacles and effective fighting positions take significant time to establish. The following are best practices to help maximize time available and fully integrate engineers into the defense:

- Know the engineer task-organization for the defense before transition to the defense.
- Have an initial plan for the engagement area.
- Plan for the security of the engineers in the engagement area.
- Plan for the sustainment of the engineers.

The process of consolidating and reorganizing after conducting an attack or movement to contact can be chaotic ...

Long before the transition begins, BNs need to know which engineer assets will be task-organized to them during the defense. The process of consolidating and reorganizing after conducting an attack or movement to contact can be chaotic as engineer assets shift throughout the AO. The gaining element should make initial contact with the engineer element to determine the types of equipment it brings to the fight with its formation. BN staff members and the task force (TF) engineer can use this information to begin planning for the defense using preliminary running estimates.

Staff members must conduct a thorough intelligence preparation of the battlefield (IPB) to ensure a comprehensive understanding of how and where enemy forces are likely to enter the engagement area. Doctrinally, a division defines the obstacle zone and its intent, while subordinate brigades designate the obstacle belts.⁹ BN staff members plan tentative obstacle groups within the belts based on engineer running estimates, class IV availability, and doctrinal work rates to ensure subordinate units emplace individual obstacles that support the higher HQ scheme of maneuver.¹⁰

The TF engineer advises on work rates and obstacle priorities by type to inform the commander's prioritization of engineer dig assets. Commanders typically prioritize their engineers on countermobility during the defense to enable the destruction of the enemy with the massed effects of all weapons systems in the designated engagement area.¹¹

The command post (CP) needs a thorough method for tracking the engineer efforts and updating the obstacle overlay. Tracking grid locations of obstacles ensures proper emplacement and direct-fire coverage. The updated obstacle overlay enables rapid and safe movement through the engagement area during the rearward passage of the security element.



Figure 7-3. Engineers setting concertina wire

During obstacle construction, engineers arguably need security more than other assets. Engineers are a high-value target (HVT) for the enemy because their destruction jeopardizes the success of the defense. In LSCO, near-peer adversaries will likely initiate spoiling attacks to disrupt engagement-area development and, if possible, destroy friendly engineer assets. Security elements sufficiently forward of engineers protect against spoiling attacks while allowing engineers to continue priorities of work in the engagement area. Withdrawing engineers to protect them costs time, potentially resulting in an incomplete or smaller-than-intended obstacle effort. Requiring engineers to self-secure is not an ideal method; self-securing reduces available labor and total obstacle construction. Many heavy engineer units also lack the direct-fire weapons systems capable of defending against an armored threat.

SUSTAINMENT CONSIDERATIONS

In defense under LSCO, as in defense in smaller-scale operating environments, logistics priorities shift to ensuring defending units have necessary class IV and class V, and that attached engineers have necessary class III for their equipment. Supply lines and line of communications (LOCs) are still a vulnerability for any opponent in LSCO. Commanders have to consider stockpiling or caching ammunition and limited amounts of petroleum products in centrally located positions within the main battle area to simplify support requirements and reduce the enemy's ability to interfere with logistics operations.¹² Units considering using ammunition caches must weigh its ability to protect them.¹³

Maneuver BNs and brigade engineer battalions (BEBs) must share the same understanding of command and support relationships for task-organized engineer elements.¹⁴ Engineer assets, specifically dozers, consume a lot of fuel and can be problematic if the parent unit does not provide a logistics tail and the maneuver unit does not factor them into its sustainment planning. The BN staff must anticipate the fuel requirements for the engineer vehicles and equipment, and be prepared to send fuelers forward into the engagement area for resupply. Every hour counts during obstacle construction; bringing fuel to the engineers keeps them focused on the obstacle effort and preserves time. Using the time to catch up on maintenance is equally important to the engineer effort in the preparatory phase of the defense. As previously mentioned, time is a critical component in a defense, especially in LSCO. Units need to push multifunctional maintenance support with a variety of maintenance personnel with appropriate equipment as far forward as possible to reduce the need to evacuate equipment and ensure all variants of combat platforms and weapons systems can be quickly returned fully mission capable for the defense and subsequent offensive operations.¹⁵

INDIRECT FIRES CONSIDERATIONS

Effective fires play an essential role in LSCO defense as it is likely Army forces will be required to defend against enemy forces equipped with missile, rocket, and cannon systems with superior range and lethal effects.¹⁶ As former Combined Arms Center Commanding General, Retired LTG Michael Lundy stated, "Against some opponents, U.S. Army cannon and rocket artillery is likely to be both outranged and significantly outnumbered, which would present a tactical problem even if friendly forces were not

contested in the air domain.”¹⁷ Fire support is critical to regaining the initiative in defense by disrupting the enemy’s ability to synchronize an attack by striking its assembly areas, breaking up its attack formations, disorganizing its command, control, and communications, impairing its target acquisition efforts, and reducing its morale.¹⁸

Supply lines and LOCs are a vulnerability for opponents in LSCO just as much as they are for friendly forces. Commanders can use long-range cannon, rocket, and missile fires, and air interdiction to disrupt or isolate peer and near-peer threats from sources of support, potentially providing additional time to prepare defensive positions and options to defeat the enemy in detail.¹⁹

Air defense (AD) is critical on a battlefield with contested air superiority. Successful air defense artillery (ADA) employment includes incorporating ADA in full capacity and with specific engagement criteria. The position of ADA assets must be thought out and managed effectively. The commander should place ADA assets within the range of assessed enemy air avenues of approach to detect and destroy those threats. ADA assets should have engagement criteria and priorities just like any other weapons system; for example, if a Stinger team can destroy an aircraft, it should be used as the first line of defense to mitigate compromising higher-value, vehicle-mounted ADA systems. ADA assets must be well concealed and have battle positions (BPs) similar to other combat vehicles. Defensive plans must include the ability to rapidly reposition ADA assets to respond to significant air threats targeted in a specific area, ensuring there is enough security to defeat the threat. There must also be a thorough combat service support (CSS) plan for rapid resupply of missiles at the BPs in case they expend their basic load faster than anticipated. One option is to cache missiles forward to limit the amount of movement on the battlefield and giving away fighting positions.

TRANSITION TO THE OFFENSE

In any operational environment, defenders must aggressively seek ways to attrit and weaken attacking enemy forces before the initiation of close combat. Defenders must maneuver to place the enemy in a position of disadvantage and attack the enemy at every opportunity.²⁰ Under the expected quick transitions and high tempo of LSCO, the demand to plan and rehearse transitions from the defense to the attack is only higher; failure to do so results in loss of the initiative, giving enemy forces time to consolidate and reorganize, escape, or regain the initiative themselves.



Figure 7-4. Soldiers transition to offense.

Transitions occur rapidly in LSCO; commanders need to make timely decisions and communicate their intent to subordinates with speed and efficiency or risk losing an opportunity to close with and destroy the enemy. During the defense, a commander missing the indicators of enemy culmination may allow the enemy to successfully transition to a defensive posture or execute a form of retrograde.²¹ The battle staff is vital to the commander's ability to see the fight and make timely and well-informed decisions. Detailed planning and staff members maintaining current running estimates provides the basis for information the commander and staff members need to identify when the enemy is nearing culmination and make decisions during the fight.²² The commander needs to quickly capitalize on indicators of enemy forces reaching a culminating point. The enemy will be dispersed, extended, and degraded, and any enemy defensive preparations will be hasty.²³ Once a commander decides to transition from the defense to the offense, they need to widely and expeditiously disseminate simple and clear intent, concepts, and graphics for the counterattack or resumption of offensive operations. Ideally, the counterattack plans were distributed along with the base defense plan.²⁴ Simple and clear graphics are essential for future offensive operations and the movement of units through the defense

to counterattack.²⁵ There should be a clear delineation between unit areas of responsibility, battle handover lines, and offensive phase lines, including the limit of advance. Each unit and vehicle must understand exactly where to go and its purpose. The plan must be simple so the mental transition from a fighting defense to maneuvering on the offense occurs quickly and seamlessly. Wide dissemination of graphics ensures that leaders at all levels understand the full scope of the operation and can quickly adapt to branch plans and sequels.

A peer threat preparing for a counterattack in LSCO likely has more capabilities at its disposal than adversaries friendly forces have faced in recent history. Windows of opportunity to seize the initiative are therefore, small.

A peer threat preparing for a counterattack in LSCO likely has more capabilities at its disposal than adversaries friendly forces have faced in recent history. Windows of opportunity to seize the initiative are therefore, small. Additionally, because of the scale and intensity of LSCO, commanders may need to commit a reserve during the defense or assume risk by not allocating one in exchange for massed combat power. It may be necessary to counterattack with forces already in contact, normally the least favorable course of action (COA).²⁶ To ensure units capitalize on available opportunities, the synchronization and sequence of the counterattack must be well defined and, like operations graphics, widely disseminated. Each unit must understand its timing regarding other units and conditions on the battlefield. A unit moving too early results in an unsupported attack, or, if a trailing unit, congestion on the battlefield. A unit moving too late results in unsupported forward units, or delaying trail units. The unit must rehearse the sequence of events, with the full force, if possible, as part of the defense rehearsal. The full force rehearsal gives leaders an understanding of how long it will take to execute the process, highlight problem areas, and enable adjustments to the final plan.

As previously noted, transitions occur rapidly in LSCO. Sustainment is one of the most critical factors in a swift and efficient transition from the defense to the offense, especially for armored formations. Unless units are logistically resupplied, they will enter offensive operations with limitations in fuel and ammunition, and potentially culminate.²⁷ Company CPs must track the class V and class IIIB consumption of their companies throughout the fight, and direct the rearming and refueling of vehicles and sections while in contact. A well-run, company-level logistics release point (LRP) is

critical to the rapid rearming and refueling of combat vehicles. There should always be a vehicle receiving a refuel or a rearming while in the defense. This method ensures the company is as ready as possible to transition to the offense once the order comes. Commanders need to rehearse the rearming and refueling process, including the time it takes to drive to the LRP, approximate time spent at the LRP, and return time. Other considerations for actions at the LRP include which vehicles, sections, or platoons are covering down on vacant areas, and possible survivability moves to occupy vacant fighting positions if the departing vehicles have expended a high amount of class V because of the enemy scheme of maneuver. Failure to properly plan and rehearse the logistics of rearming and refueling during the defense results in the unit being unable to execute the ordered mission once the defense concludes, or unable to finish through to the limit of advance because of fuel consumption.

The biggest challenge of defending in LSCO is the complexity of preparing for the defense while staying nested across multiple echelons. Commanders must understand how their unit fits into the division's plan and how conditions change quickly and constantly on the battlefield.

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SECTION 3

Aviation: Training for Large-Scale Combat Operations



Figure 3-A. Preparing to take off

CHAPTER 8

“A Way” to Prepare Aviation Units for Large-Scale Combat Operations

INTRODUCTION

Large-scale combat operations (LSCO) demand Army aviation (AVN) fights at a pace and tempo the majority of our serving officers, noncommissioned officers (NCOs), and Soldiers have never encountered. The LSCO battlefield stretches the limits of our signal and sustainment enterprises. We no longer operate under the general expectation of continuous friendly air superiority; ground forces are sometimes overmatched; and we face new threats from electronic and cyber warfare.

This chapter includes a series of “a ways” (to operate) from the perspective of the National Training Center’s (NTC’s) Eagle Team, using a long-range training plan approach to highlight focus areas and spur ideas and thoughts within your organization.

As the Army aviation enterprise grapples with how to prepare for this new operating environment, our role as aviation unit leaders is to reblue (retrain Soldiers on a previous task) our frameworks and processes for training. Regardless of final concepts, we bear the responsibility to manage training resources, develop collective and individual task proficiency, and produce capable aviation units.

How should we, as aviators, operations officers, NCOs and leaders prepare our organizations? How should we train our sections, platoons, companies, and battalions (BNs)? What should be considered as we build a focused training plan for each of the warfighting functions (WfFs) within our organizations at echelon—to include joint and multinational training opportunities, courses, and processes?

This chapter includes a series of “a ways” (to operate) from the perspective of the National Training Center’s (NTC’s) Eagle Team, using a long-range training plan approach to highlight focus areas and spur ideas and thoughts within your organization. In the broadest terms, every aviation leader should ask themselves—

- What training does our immediate organization need to accomplish in a gated training strategy?
- Have I, our organization’s leader, provided input to the BN S-3 to include that training in the unit’s overall training strategy?

Commanders must also ask—

- What does the team of teams need to do to be successful?
- Have I been involved to make the right decisions at the correct time?
Have I driven training for the organization?
- Have I focused our training to meet our higher headquarters (HQ) commander’s intent?

It is easy to write about training, discuss it, and put it on a calendar. It is arduous to complete. Units must plan and execute individual continuous training such as readiness-level progressions, operator-level maintenance, and communications equipment use. Simultaneously, the unit must build toward large, complex training events, and challenge leaders, subordinate units, and standard operating procedures (SOPs) with—

- Planning multiple flight operations over long distances, based in an austere field environment
- Planning numerous jump-forward arming and refueling points (J-FARPs)
- Creating a robust primary, alternate, contingency, and emergency (PACE) plan for over-the-horizon and line-of-sight (LOS) communications (a PACE plan for each WfF)
- Working for/reporting to a participating HQ while integrating into and supporting a ground scheme of maneuver

Successful training demands effort from the entire unit. It requires a unit's staff members to understand and run with a commander's guidance and priorities while simultaneously seeking out additional opportunities.

All of this takes place against the background personnel movements, new equipment fielding, and a litany of other unforeseen circumstances, which undoubtedly thwarts the operations officer's best-laid plans.

Successful training demands effort from the entire unit. It requires a unit's staff members to understand and run with a commander's guidance and priorities while simultaneously seeking out additional opportunities.

Ultimately, protecting individual continuation, and platoon and company training, as well as staying focused on the commander's selected mission-essential tasks (METs) allows the unit to get multiple repetitions at echelon, get the most out of culminating training events, and prepare for its next challenge.

COMMAND AND CONTROL

This section is presented as a building block for organizations to establish training plans, which develop command and control (C2) capabilities, and competencies throughout their force. Because of the varying leadership styles of commanders, levels of experience, and time available for each individual organization, this handbook does not provide specific examples; however, it details the processes to develop or refine products.

The C2 WfF enables commanders to synchronize and converge all elements of combat power (Army Doctrine Publication [ADP] 6-0, *Mission Command: Command and Control of Army Forces* [31 July 2019]). The following text provides examples of individual training for members of the command post (CP) and discusses the structure of a CP to conduct the operations process.



Figure 8-1. Logic map, combat power model.

Source: ADP 6-0, *Mission Command: Command and Control of Army Forces*, introductory figure-1, pg. x, figure 1-2, pg. 1-20

BUILDING THE BASE WITH INDIVIDUAL TRAINING

The commander and personnel who occupy CPs are the most important aspects of the C2 WfF. It is crucial these individuals fully understand their baseline task to exercise C2 over their unit in an austere setting. Some of this training takes place in the institutional domain; the remainder

takes place in the operational and self-development domains, to include participating in unit collective training, attending troop schools or development courses, and conducting unit-driven leader professional development (LPD) sessions.

Each staff section must understand how to properly employ and use mission command information systems (MCISs). Staffs who cannot use their systems are severely limited in their ability to perform required duties.

Units generally must coordinate with higher echelons for introductory and sustainment training. For example, many installations offer troop schools on the command post of the future (CPOF), and the joint capabilities release (JCR) and/or joint battle command platform (JBCP). Every effort should be made to maximize these courses; not every member of the team will be able to attend, but HQ must conduct thorough analysis to ensure an adequate number of trained operators.

The Air Cavalry Leaders Course (ACLC), Joint Firepower Course (JFC), and Battle Staff NCO Course (BSNCOC) are three highly recommended training courses. The ACLC and JFC provide a baseline understanding of how to integrate aviation as a maneuver element. The ACLC is ideal for allowing intelligence officers to visualize outcomes of intelligence preparation of the battlefield (IPB) and present tangible enemy courses of action (COAs) to the commander to drive operational decisions. The BSNCOC provides staff NCOs baseline requirements to work on a staff; this is critical for the success of the entire HQ, as staff primaries and staff NCOs must be interchangeable to conduct continuous operations.

Each staff member must understand the larger concepts of staff operations to function effectively as a team. Units may conduct LPDs to familiarize the staff with terms and concepts, and broaden their understanding of the operations process. Publications that spark interest and discussion in subsequent topics include—

- Army Techniques Publication (ATP) 3-04.1, *Aviation Tactical Employment* (7 May 2020)
- Field Manual 3-04, *Army Aviation* (6 April 2020)
- Field Manual 6-0, *Commander and Staff Organization and Operations* (5 May 2014)
- ADP 5-0, *The Operations Process* (31 July 2019)

- ADP 1-02, *Terms and Military Symbols* (14 August 2018)
- ADP 3-0, *Operations* (31 July 2019)
- Field Manual 3-0, *Operations* (6 October 2017)
- ATP 2-01.3, *Intelligence Preparation of the Battlefield* (1 March 2019)

PLAN: CONDUCTING FUTURE OPERATIONS AS A STAFF

The only way for staff members to improve collective planning skills is to train repeatedly on each step of the military decision-making process (MDMP).

The only way for staff members to improve collective planning skills is to train repeatedly on each step of the military decision-making process (MDMP). Whenever possible, the staff should train by planning an operation (for example, a tactical road march [TRM], an assembly area protection plan, etc.) to build skills necessary for success. Even when the commander provides a directed COA, the staff can conduct thorough analysis to properly develop and analyze the COA.

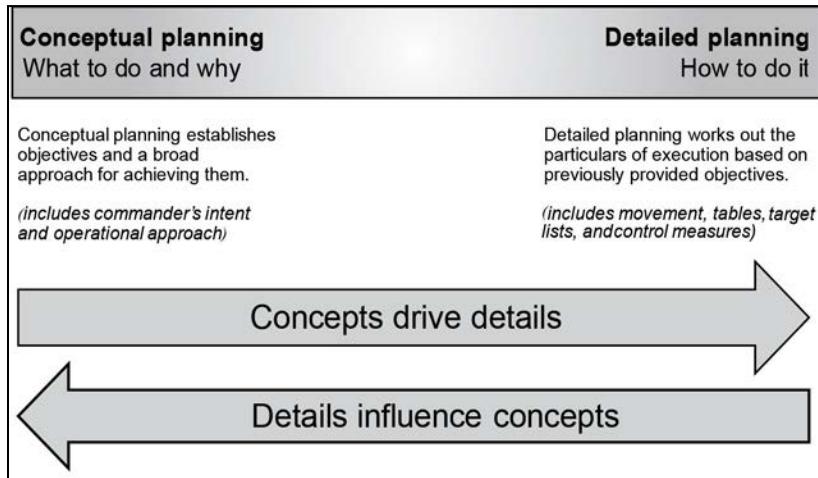


Figure 8-2. Integrated planning.

Source: ADP 5-0, *The Operations Process*, figure 2-3, pg. 2-16

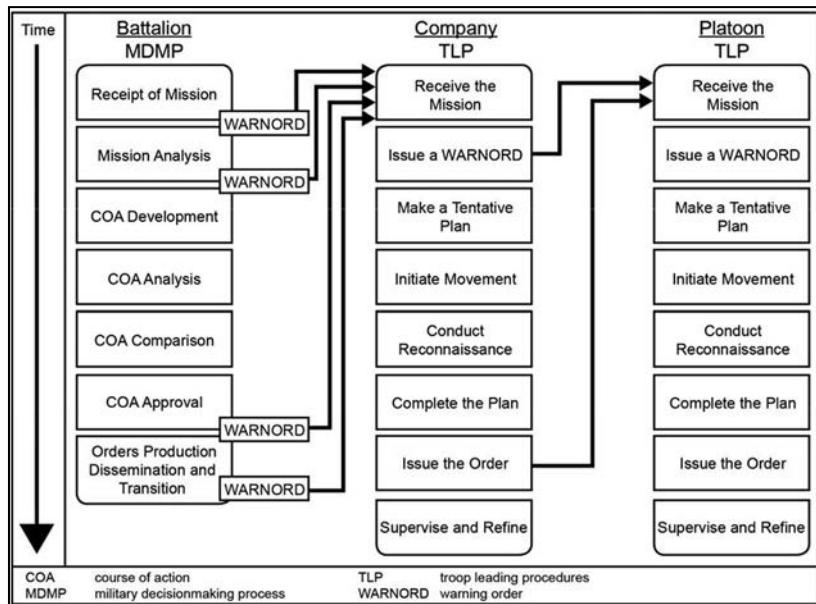


Figure 8-3. Parallel sequences of the MDMP and troop leading procedures. Source: Field Manual 6-0, *Command and Staff Organization and Operations*, figure 10-1, pg. 10-2

Developing planning standard operating procedures (PSOPs) to codify required products is a best practice for building shared understanding within a staff. It is also imperative to define which element, staff or company, will conduct certain portions of planning for specific missions to maximize parallel planning. Through a combination of ATP 3-04.1, *Aviation Tactical Employment*, the U.S. Army Aviation Center of Excellence (USAACE) aviation handbook, and the standardized MET training and evaluation outline (T&EO), units can develop checklists to ensure each aspect and consideration of a specific mission is conducted.

The first essential step to planning is the analysis of time available and development of a planning timeline. This ensures timely dissemination of products to subordinates (one third/two thirds rule), establishes a clear delineation over time between current operations (CUOPS) and future operations (FUOPS) for the staff, and sets a tangible end state for product dissemination. Many units have adopted the use of a higher, operational, planning, enemy (HOPE) timeline (see Table 8-1 on pages 90 and 91) to synchronize events over time.

Table 8-1, Part 1. HOPE timeline example

HHC: headquarters and headquarters company

NLT: no later than

OBJ: objective

Recon: reconnaissance

IAA: tactical assembly
UTC: until completion

AASLT: air assault
A, B, C, D, E Co.: Alpha, Bravo,
Charlie, Delta, Echo Company

ATK: attack

BCCT: brigade combat team

BN: Battalion

COR: course of action
FARP: forward area refueling point

Table 8-1, Part 2. HOPE timeline example

AASLT: air assault	HHC: headquarters and headquarters company
A, B, C, D, E Co.: Alpha, Bravo, Charlie, Delta, Echo Company	NLT: no later than
ATK: attack	OBJ: objective
BCT: brigade combat team	Recon: reconnaissance
BN: battalion	TAA: tactical assembly area
COA: course of action	UTC: until completion
FARP: forward area refueling point	

To maximize the time available to plan tactical aviation missions, units must develop baseline plans for anticipated, routine events such as TRMs/jump sequences and the tactical assembly area (TAA) base defense plan.

To maximize the time available to plan tactical aviation missions, units must develop baseline plans for anticipated, routine events such as TRMs/jump sequences and the tactical assembly area (TAA) base defense plan. Both events can be major movements for the unit, but with advanced planning, impact can be minimized. Task forces (TFs) can develop both plans at home station and adjust based on mission, enemy, terrain and weather, troops and support available, time available, civil considerations [mission variables] (METT-TC), placing them somewhere between a battle drill and a deliberate plan. The base defense plan is further defined in the protection Wff section of this chapter.

While training and planning TRMs/jump sequences, areas of specific consideration should include—

- Rapid C2 transition between the main command post (MCP) and the tactical command post (TAC)
- The individual staff members and corresponding MCIs required to properly conduct C2 from the TAC
- The sequencing or timing of the jump to minimize mission impact

Do not make your culminating exercise easy; jump your MCP and use your TAC.

PREPARE THE TRANSITION: FUTURE OPERATIONS TO CURRENT OPERATIONS HANDOVER

The FUOPS to CUOPS transfer is often a point of friction. Special emphasis and training must be placed on the transition to ensure continuity of operations and command. Timing can vary by day or mission depending on the time available. A well-designed planning timeline has multiple touchpoints to ensure all necessary information is transferred from Wff plans sections to CUOPS counterparts. These touchpoints could include planners attending and briefing at least one shift change each day, CUOPS section attendance TF rehearsals, and detailed one-on-one discussions between the planners and CUOPS cell.

Rehearsals at echelon are fundamental to ensure the plan is understood across the TF.

Rehearsals at echelon are fundamental to ensure the plan is understood across the TF. Depending on the time available, units can choose to do any of the rehearsals outlined in Field Manual 6-0. Unit rehearsal scripts should be sequence key events over time and integrate enablers and WfFs. In addition to the TF rehearsal, CPs should be trained to execute follow-on CP rehearsals which ensure common understanding of the fighting products, identify systems on which information will be passed, and clarify which pieces of information are vital to the mission.

CONDUCTING CURRENT OPERATIONS AS A STAFF

Functions¹ common to all CPs include—

- Conducting knowledge and information management
- Building and maintaining situational understanding
- Controlling and assessing operations
- Coordinating with internal and external organizations
- Performing CP administration

An efficient CP is the most important factor in the TF’s ability to conduct C2. Every CP should be competent and capable in the functions of a CP.

Field Manual 3-04 (paragraph 2-82, pg. 2-18) defines an aviation MCP’s primary mission as “... to control operations, maintain situational understanding, inform the commander’s decisions, and prepare and publish orders and plans.” To build proficiency, the MCPs and TACs must be established on a routine basis during unit events such as command maintenance, gunnery, and field training exercises (FTXs), or solely to practice battle drills. CP training focus must include attention to layout, products, and the common operational picture (COP).

The COP provides the commander the information necessary to make decisions. A graphic depiction of the area of operations (AO) creates situational awareness for all the missions an aviation TF may conduct. At a minimum, units should include the following overlays on their COP:

- Friendly situation (with maneuver graphics and adjacent unit locations)
- Enemy situation
- Logistics COP (LOGCOP)/medical common operational picture (MEDCOP)
- Fires and airspace (depicting active and occupied position areas for artillery [PAAs])

Staff estimates from all Wffs provide a shared understanding across the CP. Units should consider who will and how to pull the requisite data for all products on the COP. Units can use an analog COP, digital COP, or a combination of both.

Battle drills and battle rhythms are vital to creating shared understanding. Units should revise and train battle drills on a regular basis to ensure they cover the broad range of events and contingencies expected in the current operational environment, removing or altering legacy counterinsurgency (COIN)-focused products.

SIGNAL SYSTEMS: THE INSTRUMENT OF COMMAND AND CONTROL

Training on C2 systems should be a deliberate, continuous, sequential, and progressive part of the larger unit-training plan (UTP). Training must adapt to the environment and conditions of emerging threats. Commanders should look at incorporating denied and degraded communications environments during home-station training to prepare their formations for the rigors of the projected operating environment. Units should train to proficiency in all of their organic and requested over the horizon (OTH) communications systems.

Signaleer training should progress from an individual focus on fundamentals, to a crew focus on operation and maintenance of assigned systems, to a section focus on establishing communication nodes, to the integration with the warfighter. Units can use the signal assessment tables from Training Circular (TC) 6-02.1, *The United States Army Signal Corps 2019 Training Strategy* (11 July 2019), to communicate and organize individual and collective communication training requirements. Signaleers should train to rapidly employ equipment in austere conditions without external support resources. For example, per Technical Manual (TM) 11-5985-357-13, *Operator's, Organizational, and Direct Support Maintenance Manual for Antenna Group, OE-254/GRC* (1 February 1991), a three-man retransmission crew should be able to establish communication nets using OE-254 antennas relatively quickly.

The mission command digital master gunner (MCDMG) and a signal-digital master gunner (S-DMG) are responsible for training signal Soldiers and the larger battle staff to integrate, visualize, and troubleshoot the primary MCIS. They are also trained to generate a COP for the commander and battle staff using a unit's integrated system-of-systems CP. Units can register for the MCDMG Course (school code 150, course code 9E-SI/ASI5C/920-ASI5C [CT]) and the S-DMG course (school code 113, course code 531- F75 [CT]).

Regardless of the specific systems selected, it is imperative the S-6 develops and trains a comprehensive PACE communications plan for all phases of exercises and operations. PACE plans should be determined for each WFF and allow for beyond line-of-sight (BLOS) and extended LOS communication.

Table 8-2. Example unit PACE by warfighting function.

Source: TC 6-02.1, *The United States Army Signal Corps 2019 Training Strategy*
 (11 July 2019), figure B-2, pg. B-3

	Mission Command	Movement and Maneuver	Fires	Sustainment	Intelligence	Protection
P	FM (CMD net)	FM (O&I net) (Fires [V] net)	FM (A&L net)	FM (O&I net)	FM (O&I net)	FM (O&I net)
A	JC-R (Z)	JC-R (Z)	JC-R (Z)	JC-R (Z)	JC-R (Z)	JC-R (Z)
C	TACSAT (X)	HF (Y)	HF (Y)	HF (Y)	HF (Y)	LMR
E	(CMD net)	TACSAT (X)	TACSAT (X)	RUNNER	TACSAT (X)	*

A: alternate	O&I: operations and intelligence
A&L: administration and logistics	P: pace
C: contingency	SINCGARS: single-channel ground and airborne radio system
CMD: command	TACSAT: tactical satellite
E: emergency	V: voice
FM: frequency modulated (identify SINCGARS radio net [for example, command net])	X: identify uplink/downlink channel
HF: high frequency	Y: identify channel or address
JC-R: joint capabilities release	Z: identify role name or chat room
LMR: land mobile radio	*: no feasible solution

INTELLIGENCE

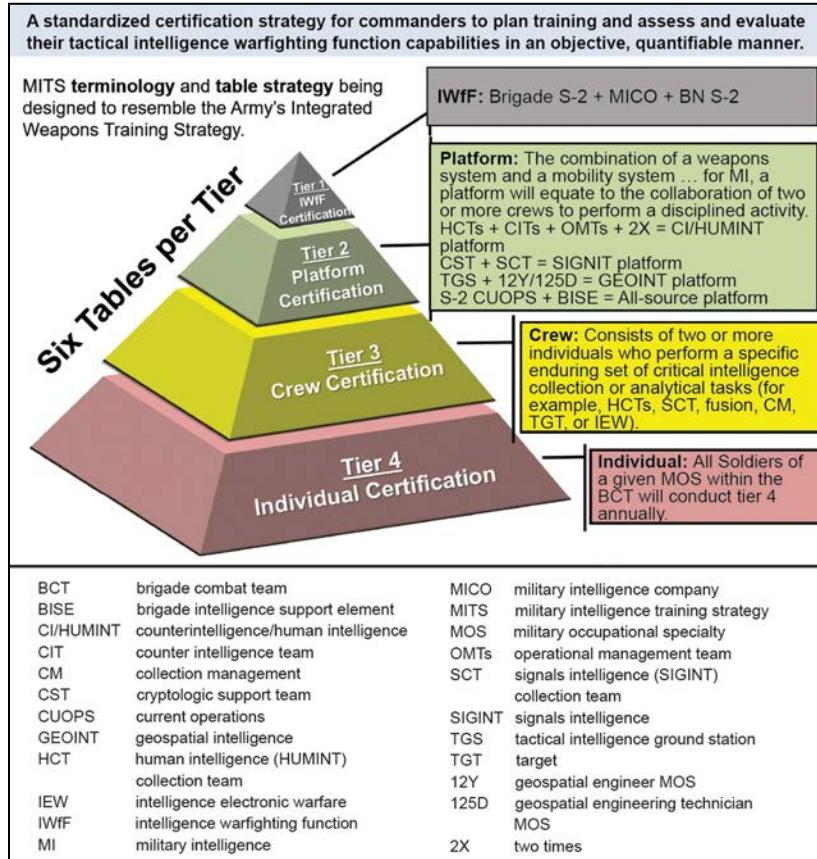


Figure 8-4. MITS tier structure. Source: TC 2-19.400, Military Intelligence Training Strategy, figure 1-1, pg. iii

An aviation BN intelligence section contributes to training by developing creative training scenarios using IPB, information collection, and the TC 7-100 series for hybrid threat, and TC 7-100.2, *Opposing Force Tactics* (9 December 2011), to inform training operations and commander's decisions. Aviation units train to fight in operations environments, which encompass

a wide range of enemy units and capabilities employing traditional, unconventional, and hybrid tactics. This includes training to counter a wide spectrum of threats from small arms, man-portable air defense systems (MANPADSs), and air defense (AD) systems employed independently or as part of an integrated AD system.

Once task proficiency is achieved under base conditions, units can alter scenarios to replicate projected operational environments, more complex or lethal threats, and conditions that require leaders to adapt to degraded or denied capabilities. Aviation intelligence sections can develop progressive internal individual and collective section training using the Military Intelligence Training Strategy (MITS) TC 2-19.400 series along with a long-range training plan before warfighters or military intelligence (MI) gunnery events. MITS development at the individual and collective level allows S-2s to be proactive.

Since aviation intelligence sections do not often participate in MI gunnery, training missions need to include intelligence requirements from higher HQ to properly stress intelligence professionals from tier 4 to tier 1 training.

Since aviation intelligence sections do not often participate in MI gunnery, training missions need to include intelligence requirements from higher HQ to properly stress intelligence professionals from tier 4 to tier 1 training. Aviation BN S-2s can turn to the Army Training Network (ATN) or Combined Arms Training Strategy (CATS) for the 301 series for individual MI tasks such as basics of IPB, 052-12Y series for supporting geospatial intelligence (GEOINT) analysts, 011-150U series for unmanned aircraft systems (UASs), or 011-ACC for crew mission briefings. The ATN and CATS also provide recommended collective intelligence training for 34-SEC-0600 series for fusion tasks, 34-SEC 3170 or 3180 series for information collection and targeting, or 05-PLT-6000 or 301-35G series for geospatial data collection and information (ATN).

Higher-echelon intelligence sections and external organizations such as Project Foundry 2.0, mission training complexes, and intelligence electronic warfare tactical proficiency trainers (IEWTPTs) can support TF intelligence personnel with home-station training and realistic threat scenarios. Foundry classes recommended for aviation S-2s are the Intelligence, Surveillance, and Reconnaissance (ISR)/Information Collection Manager Course and,

for a strong analyst or assistant S-2, the Analytical Writing (for military occupational specialty [MOS] 35F [intelligence analyst]) Analysts Course. Foundry training is typically coordinated through unit-level foundry managers with their higher HQ foundry manager, supported by Army Regulation (AR) 350-32, *Army Foundry Intelligence Training Program* (2 June 2015). Other external organizations, such as a brigade MOS 35T (MI systems maintainer/integrator), can provide a BN with additional systems or intelligence architecture training on their equipment, including the Distributed Common Ground System–Army (DCGS–A), Capability Drop–1 (CD–1), joint battle command platform (JBCP), and One System Remote Video Terminal (OSRVT). Systems integration into effective intelligence architecture is challenging and requires additional training outside of initial intelligence schoolhouse classes. This can be done in conjunction with CP exercises, staff MDMP sessions, and support to platoon and above training at home station—building to full IPB in support of MDMP for CUOPS and FUOPS.

Many aviation BN commanders choose to have an aviation captain as the S-2 officer in charge (OIC) in lieu of the modified table of organization and equipment (MTOE) MI lieutenant. This requires the other MI officers and NCOs in the intelligence section to supplement specific gaps in systems knowledge. BNs may also resource additional analytical support and training for the BN from Air Force squadron weather officers. Since aviation BN S-2 teams do not have organic GEOINT resources, it is recommended to request additional GEOINT support and train with MOS 35G (GEOINT analyst) and MOS 12Y (imagery analyst) with a GEOINT workstation and installed Movement Intelligence (MOVINT) Client. The 12Y can use the unit's OSRVT for real-time UAS or manned aircraft video for CP operations to enhance situational understanding.

The intelligence train-up must include focus on the intelligence PACE plan to higher and adjacent units. A full intelligence PACE plan allows the aviation intelligence section to share vital crew debriefs and full-motion video of reconnaissance objectives, and collaborate across the battlefield despite long line of communications (LOCs), environmental and enemy effects on communications, and general friction. Aviators see more of the battlefield by simply doing their job than most other Soldiers; it is imperative to gather an aviator's debrief information and get it to the intelligence professionals across the formations.

Aviation S-2 section's training, systems, and product readiness are paramount to mission success. Intelligence officers can pull from a variety of training internal and external resources to ensure their team is prepared for a mission. Home-station training and IPB production with updated analysis in intelligence warfighting function (IWFF) products set conditions for MDMP and intelligence and information collection, and enhance staff and commander's understanding of the deployed operational environment.

MOVEMENT AND MANEUVER

A thought-out, realistic, and feasible UTP is essential for any organization to prepare for deployment. This section examines what the Eagle Team sees as the most important focus areas for aviation units while at home station. It discusses individual-, company-, and BN- level training objectives, staff focuses, and "a way" philosophy for Wff progression and integration within an aviation BN/squadron TF.

Field Manual 7-0, *Train and Win in a Complex World* (5 October 2016), prescribes a series of planning considerations for commanders and staffs during long-range training calendar COA development. It lays out parameters for deciding training objectives within commanders' guidance. Companies must develop plans internally, which enable continuation training, while building to larger BN and brigade training events. Units can focus on—

- Low-density training
- Crew chief MOS certification
- Readiness level (RL) progression of new maintainers for lift aircraft
- A crew chief training program for attack maintainers
- Proper maintenance procedures in garrison and austere environments

Sergeants' time training may emphasize—

- Precombat checks (PCCs)/precombat inspections (PCIs)
- Load plans
- Rehearsing and executing convoy operations
- Combat lifesaver (CLS) certification/recertification
- Aviation life support equipment

The BN operations officer and commander must protect this time on the training calendar.

Companies can develop warrant officers by ensuring professional military education, and through career progression courses to improve specialty skills. Companies should also put emphasis on developing company-level standards for pilot-in-command (PC) and air mission commander (AMC) progression, and on “growing the bench” through RL progressions.

Aviator classes should be driven from the BN level with focus areas for weekly briefs. Classes should be taught by individual company PCs/pilot instructors. Academic classes build individual knowledge and enhance training for pilots and crew chiefs. Important aviator classes include—

- Air crew training—enhanced
- Enemy threat systems and capabilities (classified and unclassified)
- Friendly indirect fires systems and capabilities
- Friendly vehicle identification
- Survival, evasion, resistance, and escape (SERE)
- Airspace coordination order
- Airspace tasking order
- Special instructions
- Functions and operation of a company CP

Protecting individual- and company-level training while supporting their parent divisions’ brigade combat teams is a challenge for aviation battalion task forces (ABTFs). There is no perfect scenario where an aviation BN’s training cycle is integrated and protected within the combat aviation brigade (CAB) and division; the commander and staff members must thoroughly evaluate their BN mission-essential task list (METL) to determine a focus for the training cycle. It is imperative an ABTF UTP ensures time is available for company training events, company training objectives are identified, and company-level training resources are provided and

coordinated. Generating a UTP determines priorities for individual-level training such as RL progressions, PC and AMC validation, driver's training, and CLS. When focusing the company on individual tasks, ensure to include junior officer development with programs such as air assault planning "academies" or SOP working groups.

A UTP could be conducted using the following three phases:

Self-evaluation. In this phase, company commanders assess their METL and develop UTPs that provide small-unit leaders a framework for planning and preparing for operations in accordance with BN training guidance. Commanders should issue their intent, prioritize efforts, and conduct mission analysis to determine the time and resources needed so BNs can forecast and coordinate levels of support. When incorporated into daily operations such as training meetings, aircrew briefings, PC meetings, and key planning meetings, this information provides bottom-up refinement to BN MDMP.

Preparation. This phase identifies training and evaluation objectives. Units should prioritize their METs as they design training scenarios that accomplish the commander's end state. Aviation BNs are encouraged to balance UTP requirements with scenarios constructed to make the most realistic BN-level FTXs possible. Staffs should pursue available training aids to achieve the most payoff, integrating aviation assets into adjacent BCT's training events that can be tailored to meet aviation requirements. Units should incorporate each WfF. For example,—

- The fires cell should be empowered to incorporate constructed assets into crew and platoon training to provide suppression of enemy air defenses (SEAD).
- The intelligence section should be given latitude to construct a dynamic and reactive enemy force against which to train.
- The operations section should build a realistic, feasible, and friendly scenario to include a supported ground unit, adjacent units, and echelons above brigade (EAB) assets.

The BN plans section should strive to leverage organic personnel or adjacent units to provide a live opposing force (OPFOR). Staff members may also use simulated training opportunities such as the aviation combined arms tactical trainer (AVCATT) or on-post mission training centers.

Constructing one or two operation orders (OPORDs) per MET that crews may select to train on is a successful tactic, technique, and procedure (TTP), whether in the simulator/AVCATT or in the field, to get multiple repetitions exercising C2 and synchronization of WFFs.

Execution. Commanders' involvement and continuous assessment are crucial. Companies guide execution with SOPs, and thus should develop and continually refine SOPs which cover everything from specific duties and responsibilities for each member of a planning cell to priorities of work during the occupation of an aviation TAA. Companies should focus on delineating duties, checklists, timelines, and rehearsals, as well as clearly identifying standards and required meetings. Rehearsals are invaluable; time must be allotted to conduct a company rehearsal to cover additional details from the higher HQs' rehearsal. An FTX should allow a commander to exercise their SOP during a 24-hour timeline. Responsibilities and fundamentals should be enforced at all levels, including load plans, the airspace control order (ACO), and communications security (COMSEC) distribution, and should be executed as they would in combat.

Security is critical for aviation units and should be included in home-station training. BN security prevents or interdicts enemy efforts to observe or attack friendly forces in the vicinity of forward arming and refueling points (FARPs), assembly, staging, and holding areas. Local security is an enduring priority of work and prevents units from being surprised. Continuous reconnaissance and patrolling are active local security measures. Training must include the use of camouflage, noise and light discipline, reduction of electronic signatures, movement control, and ground and air sensors use.

In training, as in combat, planners should synchronize with the supported unit's scheme of maneuver as early as possible and maintain an open dialogue. Units should send liaison officers (LNOs) to units they habitually support to find combined training opportunities at echelon. As examples, company AMC training can integrate with platoon and company maneuver exercises conducted by a home-station BCT, and advanced gunnery tables can be completed in conjunction with field artillery (FA) ranges. This integration leads to better execution during large-scale training or real-world operations that focus on enduring unit orders or operation plans (OPLANs).



Figure 8-5. FARPs

UAS platforms are essential to the movement and maneuver and intelligence warfighting functions. They are used to maintain freedom of maneuver for ground forces, employ munitions on high-value targets (HVTs)/high-payoff targets (HPTs), detect enemy movements and compositions, and extend LOS communications. However, UAS Grey Eagle companies (GECOs) and Shadow platoons (SPLTs) often spend their time on RL progressions, internal programs, and training. Higher HQ staff sections consequently exclude UAS operators and MOS 150Us (UASs operations technicians [warrant officer]) from their planning and rehearsals. This results in a lack of understanding, miscommunication, frustration, distrust, and ultimately, poor mission execution.

UAS formations and aviation HQ staff members must have shared understanding of the mission, intent, and capabilities. Shared understanding can be achieved with adequate planning, preparation, and long-term training, incorporating both elements. In one model for collaborative training,—

- The staff includes the GECO/SPLT subject matter experts (SMEs) in their preplanning processes and rehearsals to understand how to employ UASs in contested airspace.
- The UAS formation begins its training to ensure operators are all current and RL 1.
- The unit operations officer incorporates the UAS by taking every opportunity to train during company- and BN-sized training events.
- Smaller events allow the UAS operators to work closely and coordinate directly with the units they will regularly support during combat operations.
- Events culminate with brigade- and higher-level training exercises.

Throughout an ABTF's UTP execution, terrain flight and tactical proficiency must be at the forefront of all individual, platoon, and company/troop training missions. The high-altitude tactics, which characterized our last 20 years of generally uncontested airspace, are no longer survivable. The standardization and aviation mission survivability officer (AMSO) sections must incorporate a feasible and safe plan to progress aviators to the level of proficiency required to survive in an integrated AD system environment. UTPs should involve team- and platoon-level movement and maneuver techniques, and masking/unmasking and mitigating air defense artillery (ADA) threats in all applicable flight profiles.

NCO involvement is crucial to training plan success. Commanders and the command sergeants major (CSMs) need to clearly define roles and responsibilities of senior NCOs. Flight companies must involve key enlisted personnel in mission planning and training, and rehearse with crew chiefs, armament personnel, and forward support company (FSC) NCOs to ensure mutual understanding before execution.

Commanders and field-grade staff officers shoulder the burden of balancing external taskings to maneuver units within a brigade or division while protecting their own training objectives and integrating them with those supported ground units. Aviation units must identify long-range training calendar needs, protect their time, and integrate as early as possible to build relationships with the supported units and attached aviation assets from within the CAB. Commanders must give priority by supported ground units, allowing the aviation BN to identify opportunities to achieve aviation-specific METL tasks and validate systems.

FIREs

Operations over the past 20 years have accustomed aviation BN fires cells to operate under an assumption of air superiority. However, when planning for and conducting training in preparation for CUOPS and FUOPS, the fires Wff must fully integrate and synchronize with all Wffs within the ABTF. This section discusses the integration of fires training objectives in gunnery tables, digital sustainment training (DST) with the Advanced Field Artillery Tactical Data System (AFATDS), and the development and standardization of fires products used in the unit's FUOPS cell and CUOPS cells.

The fire support officer (FSO) must focus and synchronize training with the following questions in mind:

- Are fires Wff training objectives included in BN training events?
- Is the fires cell capable of employing the AFATDS to integrate joint fires, coordinating SEAD missions, communicating with key mission command systems (MCss), assisting with planning, and maintaining situational awareness for CUOPS?
- What fighting products will the fires cell develop because of the MDMP that will achieve the commander's intent and create shared understanding?

Unit-scheduled training events must be scrutinized to ensure each Wff at echelon is trained to its fullest. The fires cell within an ABTF, led by the FSO, should work with the operations officer to develop fires-related training objectives during routine unit training events such as gunnery. For example, each table of an aviation gunnery scenario should include a form of fires training. The FSO can work with the unit's intelligence section to create a gunnery scenario with an enemy AD threat requiring the need for SEAD missions before aircraft reaches their battle position (BP), including

the triggers for the SEAD and PACE plan to initiate fires. Practicing scenario development can achieve multiple additional training objectives for the ABTF staff while also achieving the commander's key task of certifying sections in gunnery tables.

Integration of the fires and intelligence warfighting functions, development of the fires cell's role in rehearsals, execution of the fires PACE plan, and increased familiarization with the AFATDS are just a few of the many training objectives that can be practiced and refined early in a unit's training plan to "train as you fight" and train "multi-echelon and combined arms" as stated in TC 3-09.8, *Fire Support and Field Artillery Certification and Qualification* (30 March 2020). ABTF long-range training plans should coordinate with higher-echelon staffs and adjacent-unit fires units, including regularly scheduled AFATDS training for the ABFT fires cell.

FA units across the Army continue to focus on the use of digital fires and employ DST as the tool to create digital system experts throughout the entire fires kill chain. DST is a training plan designed specifically to address FA digital systems. The ABTF fires cell benefits from participation in a DST plan with the home-station artillery units or, if more feasible, the CAB if it has its own DST plan. This allows the FSO and fire support noncommissioned officer (FSNCO) to address and correct training shortfalls before employing the AFATDS in multi-echelon training and operations exercises where integration into brigade, division, and corps airspace structure is critical to safe and effective aviation operations.

Companies should develop and continually refine SOPs, which cover everything from specific duties and responsibilities for each member of a planning cell to priorities of work during the occupation of an aviation TAA. Companies should focus on delineating planning cell OIC duties, checklists, timelines, and rehearsals, as well as clearly spelling out the standards and required meetings. Rehearsals are invaluable; time must be allotted to conduct a company rehearsal to cover additional details from the higher HQs' rehearsal.

Developing, standardizing, and continually refining fires cell fighting products throughout the home-station training cycle pays dividends. The FSO must have a dialogue with the operations officer and commander to understand the intent for fires fighting products. The end user of products such as the target list worksheet (TLWS) and the concept of fires should have a voice in which fighting products are useful and beneficial, especially when operating from the cockpit.

Once products are finalized, the fires cell should publish the products in the unit's PSOP. This process familiarizes companies on products they receive from their higher HQ.

The fires WfF cannot be an afterthought throughout an entire home-station training cycle and only become relevant during large operations or training exercises. Fires basic training tasks should continue to be included at the crew level through complex SEAD missions in advanced gunnery tables that train the entire BN staff and pilots simultaneously.

SUSTAINMENT

The aviation S-4 is responsible for coordination of all external and internal logistical support to include supply, maintenance, and transportation. The S-4 must establish a working relationship with adjacent and supporting units to include the aviation support battalion (ASB), brigade support battalion (BSB) and the combat sustainment support battalion (CSSB). S-4s should seek to integrate and train with these partner units as early and often as possible.

The S-4's understanding of the operational environment and how sustainment enables CUOPS and FUOPS is critical to the unit's success. Forecasting consumption of commodities, particularly class III and V, is vital.

It is critical the FSC adopts a training plan that encompasses all aspects of FARPs; see Field Manual 3-04, *Army Aviation* (6 April 2020). Building FARPs into home-station training supporting missions and gunnery with an appropriately sized FARP in a nearby training area is a successful best practice. For example, units might deploy one or two fuel trucks along with required security and a robust PACE plan to a nearby training area and conduct refuel operations for an AMC progression flight. As per ATP 3-04.17, *Techniques for Forward Army and Refueling Points* (4 June 2018), FARP training plans should include—

- Weapons training and familiarization
- Firefighting and rescue procedures
- Chemical, biological, radiological, and nuclear (CBRN) detection and decontamination
- Self- and buddy-aid procedures
- Safety procedures at the FARP

- Sling load operations
- Day and night land navigation proficiency
- Night vision goggles (NVG) training
- Extensive drivers training
- Convoy procedures
- FARP maintenance operations and procedures
- Spill containment training

FARP security is especially critical. Soldiers need to be comfortable engaging targets from all positions. Executing a convoy protection platform (CPP) gunnery, gunnery tables I-IX, per TC 4-11.46, *Convoy Protection Platform (CPP) Collective Live Fire Exercises* (6 March 2019), is a months-long process and the first step to ensuring internal security during convoys. Gunnery and training on how to fill out range cards assists in establishing security at a FARP. Scheduling general support aviation battalion (GSAB) and assault helicopter battalion (AHB) training events with the attack battalion (AB) FSC mitigates the lack of an organic class V section within the GSAB and AHB distribution platoons. Incorporating the armament personnel from an AB's Delta (D) Company is a necessity when it comes to class V planning to ensure the required special tools, people, and equipment are at the FARP.

Units must become proficient in establishing multi-mission design series (MDS) FARPs and J-FARPs. J-FARP use increases as the current operational environment develops and site selection becomes a priority to sustain mission requirements.

Units should ensure the FARP meets unit mission requirements, provides support throughout all battlefield conditions, and avoids threat observation and engagement. As the support to training progresses, a logistics package (LOGPAC) to resupply the FARP will be required to continue support to larger operations such as gunnery and BN-level FTXs.

All Soldiers need to be trained on their assigned equipment in accordance with Army Regulation (AR) 600-55, *The Army Driver and Operator Standardization Program* (17 September 2019). Driver's training must teach Soldiers how to perform preventive maintenance checks and services

(PMCS) to assigned equipment in accordance with the operator's manual and properly fill out Department of the Army (DA) Forms 5988-E and 2404, *Equipment Maintenance and Inspection Worksheet*, arguably the most important step in the preventative maintenance program.

The aviation maintenance company, which sustains operations and forecasts aviation maintenance for the commander, is another critical sustainment element. When planning training or operations, modularity in Army aviation is crucial. Low-density tools and special skills must be planned. Aviation maintenance is the foundation for providing continuous aviation mission support to the ground force commander (GFC). It is important key leaders within the formation continuously evaluate the unit's ability to perform the required level of maintenance necessary to meet the GFC's intent.² It is the commander's responsibility to plan, prepare, execute, and assess UTPs, which not only results in a unit proficiency in executing METs, but also incorporates low-density or small-section training opportunities to improve individual task proficiencies and contribute to overall unit readiness.³

The identification of maintenance requirements is a critical and often overlooked step in mission analysis. Key maintenance leaders (including AMSOs, PC OICs, and aviation maintenance company commanders) must be included in MDMP and BN-level meetings and rehearsals. These touchpoints assist in identifying operational and maintenance requirements, synchronizing maintenance requirements in the most efficient manner possible. By integrating key maintenance leaders, the executive officer (XO) can drive maintenance decisions and prioritize actions early in the planning process, maximizing combat power to support the operation. Incorporating maintenance running estimates into MDMP allows the ABTF to identify limitations of available combat power and develop appropriate and realistic COAs before execution.

An aviation maintenance company must have the capability to conduct split-based operations within and across an entire theater to help maintain and generate combat power for the ABTF. The aviation maintenance company is responsible for training field-level maintenance in accordance with the maintenance allocation, including downed aircraft recovery teams (DARTs) and battle damage assessment and repair (BDAR). DARTs and BDAR are key to any unit trying to maintain combat power after receiving battle damage and unscheduled maintenance issues. Commanders have to incorporate DART battle drills into their training plan and ensure aircraft recovery is briefed at every rehearsal. Company SOPs must include a

downed aircraft recovery section that outlines basic recovery procedures for damaged or disabled aircraft. BN-level DART battle drills and training should aim to improve proficiency in ground convoy operations, aerial recovery kit installation, battle damage or repair, and security team emplacement.

Routine maintenance meetings, trained preventative maintenance at home station, and maintenance training conducted while in austere environments, improve maintenance support to operations. Sustainment training is critical for the success of an ABTF and can be planned at echelon from section/platoon training to large BN events to build capacity.

PROTECTION

The protection WfF is the related tasks and systems that preserve the force so the commander can apply maximum combat power to accomplish the mission.⁴

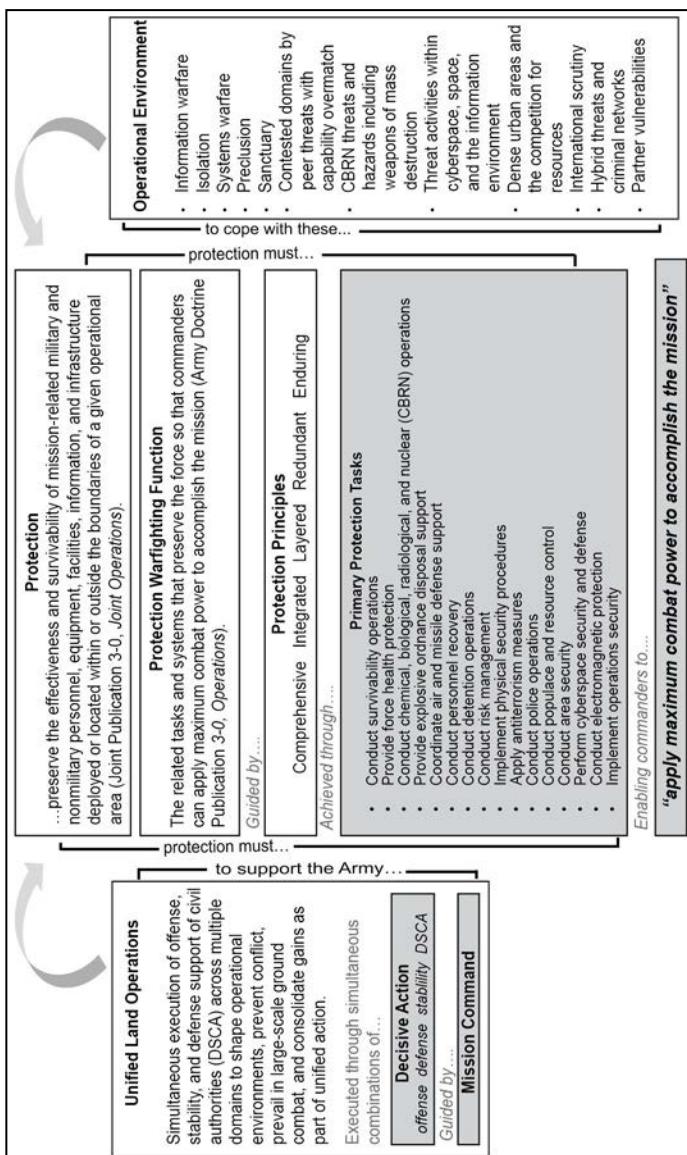


Figure 8-6. Protection logic map.
Source: ADP 3-37, Protection, figure 1-1, pg. 1-2

Preserving the force includes protecting personnel and physical assets and is more than just security and defensive operations. Key protection tasks include survivability operations, health protection, CBRN operations, area security, and electromagnetic (EM) protection.

The first step in planning protection is establishing a protection working group. This group consists of commanders, CSMs, and key and special staff members; attendees include the S-2, S-3, S-6, standardization instructor pilots, safety officer, AMSO, medical officer (MEDO), CBRN specialist, and electronic warfare (EW) specialist. The commander must prioritize what to protect, and then delegate the proper authority to the appropriate leaders to develop a feasible scheme of protection, which is then coordinated with higher echelon and adjacent units.

Once the protection scheme of maneuver is developed, the unit can determine its protection requirements, develop a training plan, and publish a protection order. The headquarters and headquarters company (HHC) commander, with the experience and guidance of the CSM, is responsible for managing the TAA protection plan, including specialized team training related to TAA security. Examples of specialized protection teams are the quartering party, TAA security (day and night), quick reaction forces (QRFs) (day and night), observation posts (OPs), enemy prisoners of war, CLSs, personnel decontamination, and vehicle/aircraft decontamination.

TAA security teams require a combination of individual and collective training to be effective. Focused by the BN CSM and training officer, weekly sergeant's time training is an effective training window for many security- and protection- related tasks. A weekly sergeant's time training battle rhythm provides multiple training opportunities per quarter, which can be briefed and approved during quarterly training briefs. Soldier Training Publication (STP) 21-1-SMCT, *Soldier's Manual of Common Tasks, Warrior Skills, Level 1* (7 November 2019), defines many key individual and team training tasks that directly relate to security tasks in shoot, move, communicate, and survive categories. See Figure 8-7 on page 114 for a quarterly protection-training example.

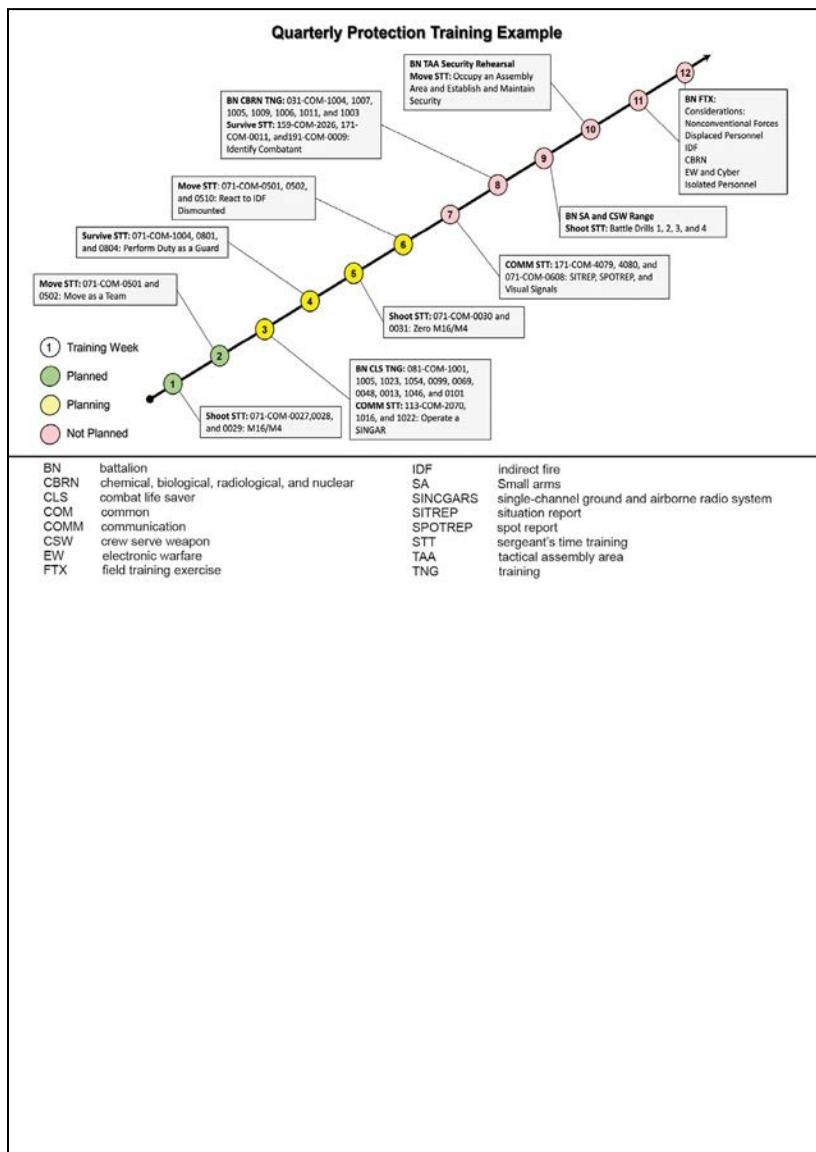


Figure 8-7. Quarterly protection-training example

Once the teams are trained and qualified at individual tasks, it is important to train the entire force during a major collective training event. An FTX is a suitable event for the commander to assess their unit's protection scheme of maneuver. A limited OPFOR to test security and roving patrols and civilians on the battlefield are useful to include in an FTX, along with real-world protection of aviation assets. Considerations for protection training during an FTX include—

- Occupying an assembly area
- Quartering party operations
- Establishing and maintaining local security
- Employing camouflage
- Reacting to indirect fire
- Reacting to contact
- Conducting QRF operations
- Responding to civilians on the battlefield
- Reacting to a chemical attack
- Electronic jamming
- Personnel recovery
- Medical evacuation (MEDEVAC) and mass casualty (MASCAL) operations

Training the unit to rapidly jump to a new location and practicing split-based operations is critical to protection and survivability. Does your unit have a prepared scatter plan for the TAA?

LSCO taxes and usually overwhelms ground and air ambulance capabilities. Air ambulance companies and aviation BN TFs that are not accustomed to commanding MEDEVAC assets need to use air ambulance exchange points (AXPs) rather than pushing forward to the point of injury. Building a robust casualty evacuation (CASEVAC) training plan for deep operations, along with the AXPs far enough forward to relieve the pressure on ground transport from ground unit role 1 facilities, stresses the MEDO's and flight medics' training and SOPs. An air ambulance company can operate in four different locations⁵ and should be trained for the challenge of maintaining a current MEDCOP for each assigned area. Other critical tasks to train on are

the higher HQs' (aviation or ground) procedures to request a MEDEVAC through a robust PACE plan and for the appropriate launch authority to give mission approval, even during TAA jumps. The BN aid station must also practice its MASCAL SOP and chemical, biological, radiological, nuclear, and explosives (CBRNE) response with the BN chemical officer (for example, contaminated casualty collection points [CCPs], clean treatment areas, etc.).

Realistic training plans must test all aspects of the protection WfF. For example, training events might include an attack on an assembly area, causing the activation of the security teams and a MASCAL event with potential follow-on MEDEVAC/CASEVAC operations. A multi-pronged event that includes security teams, CBRNE response, MEDEVACs, and MASCALs can be part of a BN's culminating training event.

A BN-developed protection scheme of maneuver provides a framework for manning, equipment, and training requirements. Continually assessing security and protection requirements and adjusting based on METT-TC improves unit survivability and provides the commander with maximum combat power to accomplish the mission.

ENDNOTES

1. ATP 6-0.5, *Command Post Organization and Operations* (1 March 2017), paragraph 1-3, pg. 1-1
2. Training Circular (TC) 3-04.71, *Aviation Maintenance Training Program* (24 July 2018)
3. Ibid, paragraph 1-6
4. ADP 3-37, *Protection* (31 July 2019)
5. Field Manual 3-04, *Army Aviation* (6 April 2020)

SECTION 4

Considerations for Field Artillery Units Preparing for Large-Scale Combat Operations



Figure 4-A. A gun crew fires its howitzer.

CHAPTER 9

Preparing to Fight with Fires

“Effective maneuver requires close coordination of movement with fires.”¹

To prepare an organization’s joint fires enterprise for large-scale combat operations (LSCO), the following problem statement is recommended to fully understand what is collectively required from leaders at echelon, and what is supported and supporting warfighting functions (Wffs).

How does a brigade combat team (BCT) establish, maintain, and transition a “permissive joint fires environment” at echelon to shape the BCT deep fight and mass effects in the close fights in support of tactical and operational objectives during LSCO?

... the joint fires enterprise begins with every organic sensor (including forward observers, scouts, Bradley and other fire support vehicles [FSVs], radars, unmanned aircraft systems [UASs], Long-Range Advanced Scout Surveillance Systems [LRAS-3s], rotary-wing [RW] aviation, etc.), delivery system (including troop mortars, task force [TF] mortars, and cannon field artillery [FA]), and Army Battle Command System (ABCs) (including Advanced Field Artillery Tactical Data Systems [AFATDSs], Tactical Airspace Integration Systems [TAISs], and air and missile defense workstations [AMDWSs]).

BCT leaders must fundamentally understand the joint fires enterprise begins with every organic sensor (including forward observers, scouts, Bradley and other fire support vehicles [FSVs], radars, unmanned aircraft systems [UASs], Long-Range Advanced Scout Surveillance Systems [LRAS-3s], rotary-wing [RW] aviation, etc.), delivery system (including troop mortars, task force [TF] mortars, and cannon field artillery [FA]), and Army Battle Command System (ABCs) (including Advanced Field Artillery Tactical Data Systems [AFATDSs], Tactical Airspace Integration Systems [TAISs], and air and missile defense workstations [AMDWSs]). These organic capabilities must properly be planned, maintained, and employed to justify a demand on requested limited echelon above brigade (EAB) assets required to fulfill capability gaps. It is also important to understand organic cannon artillery is most effective when massed at a decisive point and missions are fired in accordance with the prescribed firing order produced by properly managed AFATDS databases.

The purpose of this chapter is to provide context for FA units preparing for and executing LSCO. The BCT's direct support FA battalion (BN) is the specific unit of focus for the chapter with fires battalion staff officers and noncommissioned officers (NCOs), battery and forward support company (FSC) commanders, and first sergeants as the primary audience. The chapter is a collaboration of key developmental, billet-complete observer coach/trainers (OC/Ts) with an aggregate of about 100 rotations of experience at the National Training Center (NTC), Fort Irwin, CA.

FIRE IN SUPPORT OF MANEUVER

Fire support personnel assigned to the maneuver BN's main command post (MCP) fires cell, company fire support teams (FISTs), and platoon forward observers are more than just additional trigger pullers and staff labor.

Successful commanders understand chapter 1 of Army Techniques Publication (ATP) 3-09.42, *Fire Support for the Brigade Combat Team* (1 March 2016), as it relates to the organization and capabilities of the fire support assets within their unit. Fire support personnel assigned to the maneuver BN's main command post (MCP) fires cell, company fire support teams (FISTs), and platoon forward observers are more than just additional trigger pullers and staff labor. Fire support personnel provide maneuver companies with fire support coordination, precision targeting, types 2 and 3 terminal attack control, and effects assessment capabilities. Observers are the eyes and ears of FA. As they execute assigned tasks and respond to enemy actions, they are a major source of information for FA and maneuver commanders.

With the commander's guidance, the staff's ability to plan from sensor to shooter assists maneuver forces and their ability to synchronize fires with maneuver in the deep and close fight. Fire support elements (FSEs) at echelon must consider the level of training, equipment readiness, and communications primary, alternate, contingency, and emergency (PACE) plan to provide accurate and timely fires.

FSEs and teams at the company, BN, and brigade level are equipped with the tools to provide precision target location. These tools include a precision targeting device, forward entry device, and imagery-based mensuration tools. Observers are equipped with an optical device using a laser range finder for distance and an azimuth vertical angle module to acquire direction and vertical angle.

Reporting these assets must be separate from maneuver combat power to provide commanders with accurate visualization of their unit's capabilities on the battlefield.

The greatest asset an FST has is the FSV. These platforms are equipped with a target acquisition and communications suite capable of processing digital calls for fire. Maneuver commanders must understand FSVs, similar to their assigned fire support personnel, are not an additional maneuver platform to augment their direct-fire capability. Although outfitted with similar weapons systems, the primary purpose of FSVs are to facilitate effective targeting and engagement of enemy assets with cannon or mortar fires to enable maneuver commanders to achieve their objectives. Reporting these assets must be separate from maneuver combat power to provide commanders with accurate visualization of their unit's capabilities on the battlefield.

COMMON EQUIPMENT ISSUES

Failure to identify and troubleshoot equipment maintenance faults at the operator level causes fire supporters to use a degraded and less accurate means of fire mission processing.

Commanders must maintain their fire support equipment using their supply and maintenance discipline programs. Commanders and Soldiers must be involved before, during, and after operations to ensure deficiencies are identified and rectified. Equipment shortages should be promptly fielded or identified through periodic item inventories. Periodic maintenance and a full post field exercise recovery plan identifies shortfalls in equipment capability. A structured recovery plan identifies all unserviceable equipment before and after exercises, and generates field loss statements to support ordering parts for mission-essential equipment. Soldiers risk developing a foundational gap if they are not taught how to properly conduct preventive maintenance checks and services (PMCS) on equipment and order shortages, and sustain maintenance. Failure to identify and troubleshoot equipment maintenance faults at the operator level causes fire supporters to use a degraded and less accurate means of fire mission processing.

The maintenance and reliability of the digital fires chain and its supporting communication equipment must be a primary focus of any fires echelon. Serviceable data cables, power sources, and connections are the primary sources of failure for the digital fires chain. Units regularly lack the ability to troubleshoot equipment failure while fighting to maintain the communication PACE plan during operations. This inability to maintain or provide redundancy in communications equipment at echelon leads to significant delays in providing fires to the BCT.

Commanders must emphasize long-range communications to allow firing batteries to move forward with the forward line of own troops (FLOT) even when mission command nodes may be static.

Commanders must emphasize long-range communications to allow firing batteries to move forward with the forward line of own troops (FLOT) even when mission command nodes may be static. Power amplifiers, OE-254s, quick erect antenna masts (QEAMs), and bench stock for every cable are vital to a firing battery and the FA BN. The use of tactical internet (TI) at all levels, including the ability to troubleshoot and rectify user-level problems in the Soldier network extension (SNE), enables increased speed at greater range. Units also must place emphasis on self-recovery. During the offense and defense, a battery's ability to maneuver and not become disrupted by a deadlined vehicle pays dividends in its ability to be in place and ready to fire in support of the brigade.

Other considerations include ensuring key personnel such as radar/generator mechanics are in the proper location. Some units use these Soldiers as drivers or radio/telephone operators in positions far removed from being able to conduct hasty 20-level fixes for crucial systems at the BN tactical operations center (TOC) and radar sites.

FIRE PLANNING: TARGETING AND THE DEEP FIGHT

The fire support plan addresses available fire support means, describing how Army indirect fires, joint fires, and target acquisition assets are integrated with the scheme of maneuver to maximize effects in support of operational objectives. Fires planning in support of the deep fight is the integration of organic assets and joint fires into fire support planning to set conditions for tactical success. In the offense, fires in support of shaping operations facilitates the main effort and sets conditions for rapid transitions to subsequent operational phases.



Figure 9-1. Howitzer providing indirect fire support

The coordinated fire line (CFL) and fire support coordination line (FSCL) are two key permissive FSCMs when planning fires in support of shaping operations. Deep shaping operations occur geographically beyond the CFL and before the FSCL.

The coordinated fire line (CFL) and fire support coordination line (FSCL) are two key permissive FSCMs when planning fires in support of shaping operations. Deep shaping operations occur geographically beyond the CFL and before the FSCL. The CFL, usually established in coordination with phase lines, is a line beyond the effective range of direct-fire systems. This FSCM is used at any time within the boundaries of the establishing headquarters (HQ) to facilitate responsive effective fires employment to protect the force and shape the battlefield for follow-on operations. The FSCL is a line that facilitates the expeditious attack of surface targets beyond it and applies to all land-, sea-, and air-based weapons systems. The CFL is usually established by the brigade or division commander, whereas the FSCL is established and adjusted by the appropriate land force commander who maintains the ability to consult with superior, subordinate, supporting, and affected commanders to coordinate placement. All air-to-ground and surface-to-surface attacks short of the FSCL are controlled by the appropriate land force commander to ensure adjacent unit coordination and shared understanding, and mitigate fratricide.

Maneuver and fires functions are inseparable, complementary, and must be combined...

In the defense, shaping fires delay, deny, and degrade the enemy systems and formations before their effects can be brought to bear on friendly formations. Targeting is a critical component of the fires WfF. Maneuver and fires functions are inseparable, complementary, and must be combined to set conditions for shaping fires, identifying triggers, synchronizing available organic and joint assets, and synchronizing and applying available combat power. Targeting, through the decide, detect, deliver and assess (D3A) methodology accomplishes this synchronization for the BCT.

Targeting is an iterative process, using the D3A methodology within the intelligence preparation of the battlefield (IPB) and military decision-making process (MDMP) framework to identify high-payoff targets (HPTs), or targets identified as most beneficial to achieving the commander's intent, key tasks, and desired end state. Targeting effects can be addressed using lethal or nonlethal effects, organic indirect surface fires, electronic warfare (EW), Army attack aviation and information operations, and multi-domain operations (MDO), including joint fires and effects from the air, land, sea, space, and cyberspace domains. Targeting analyzes, prioritizes, and assigns available assets to create effects that best contribute to achieving the commander's objectives, considering operational capabilities and limitations. The commander's targeting guidance clearly and simply articulates the intent for shaping the deep fight, which focuses the staff on those specific targeting categories and enemy capabilities most critical to the brigade's success.

The targeting team, through the targeting working group (TWG), analyzes the ground tactical plan and synchronizes organic and joint fires in the deep fight to set conditions for achieving objectives. The TWG analyzes all enemy targets and identifies specific threat functions and capabilities directly interfering with the unit's ability to accomplish objectives, and matches the appropriate response to those threats to achieve the desired effects and end state.

FIRES PLANNING: BATTALION MANEUVER AND THE CLOSE FIGHT

The BCT commander is responsible for providing guidance for fires to ensure the fire support coordinator (FSCOORD) and staff understand how, when, and where to synchronize assets to accomplish the mission. Based on the BCT commander's guidance and priorities, the FSCOORD and brigade fire support officer (FSO) develop the fire support plan. The fire support plan addresses each means of fire support available and describes how Army indirect fires, joint fire support, and target acquisitions are integrated with maneuver to facilitate operational success.² The key essential elements of the fire support plan are to—

- Expand scheme of fires into a full fire support plan, reflecting current events, guidance, and capabilities
- Integrate information-related capabilities and cyberspace electromagnetic activities (CEMA) input into targeting products
- Assist subordinate staffs or units with planning and coordination
- Present fire support portions of an operation plan (OPLAN) or operation order (OPORD) briefing, including essential fire support tasks
- Confirm specific—
 - Command and support relationships
 - FA tactical mission assignments
 - High-payoff target lists (HPTLs), target selection standards, attack guidance matrix, and execution responsibilities
 - Information collection requirements
 - Assessment requirements



Figure 9-2. Establishing an ammunition resupply point

Success is contingent on the FSCOORD's or brigade FSO's ability to communicate directly with BN FSOs to ensure the observation plan supports all brigade-level targets with a primary and alternate observer. The FSCOORD and brigade FSO are the links back to the FA BN. Constant communication flow back to the FA BN S-3 ensures concurrent planning is occurring at the BN level. The FSCOORD understands and articulates the BCT maneuver plan, BCT commander's guidance for fires, priority of fires within the brigade, and HPTL to the FA BN. The following are key factors to track during parallel planning:

- Requirements for BCT special munitions such as obscuration smoke and family of scatterable mines (FASCAM)
- Understanding the general vicinity of targets to ensure firing batteries are within range, conducting reconnaissance, selection, and occupation of position (RSOP), and ensuring adjacent unit coordination
- Changes and refinements to the plan that impact the FA BN's ability to support the mission such as range, available munitions, FSCMs, retransmission, radar coverage, division coverage, or changes to combat power

Before execution, the FSCOORD is responsible for ensuring the following are completed to standard:

- Information collection and fires rehearsal
- Brigade-level sensor-to-shooter technical rehearsals
- BN S-3 FA BN tactical rehearsals

COUNTERFIRE AND PLANNING FOR RADAR

Fires planning in support of counterfire operations is a collective effort by the entire staff. Commanders must understand effective counterfire requires planning and positioning in advance of anticipated fires, not a reactionary fire mission as conducted for much of the previous 20 years. The FA BN targeting officer (TO) manages the counterfire process and focuses on hunting and killing enemy indirect firing systems. During the planning process, the BN TO coordinates the employment of target acquisition assets in the area of operations (AO). By understanding the AO, scheme of maneuver, and enemy's indirect-fire assets' composition and disposition, the BN TO develops zones to establish priorities for action. Collectively, the intelligence and fires Wffs develop named areas of interest/target areas of interest (NAIs/TAIs) and call for fire zones (CFFZs) by understanding the employment of enemy indirect-fire assets and their capability, planning range, and position area locations.

The BN TO must understand critical events (triggers) to plan and synchronize cueing schedules in support of counterfire. The target acquisition cueing schedule synchronizes the counterfire plan with targeting enemy FA systems based on intelligence and pattern analysis. Additionally, the cueing schedule acts as a planning tool for the BN fire direction center (FDC) that enables accurate mission prioritization, ammunition management, and flexibility for the BN to mass fires. During the planning process, the BN TO must request approval from the FSCOORD for a dedicated counterfire shooter (battery). The dedicated counterfire shooter's purpose is to prevent the loss of friendly combat power during high-volume fire missions or decisive points of the operation. The counterfire shooter is responsible for the immediate suppression of enemy FA systems during preplanned cueing windows.

... radar zones are templated over enemy indirect-fire asset locations, locations of major friendly command and control (C2) nodes, decisive events or objectives (breach sites), or areas where projectiles need to be ignored.

Radar zones are planned areas that prioritize actions focused on the commander's priorities. The FA BN intelligence officer and BN TO develop NAIs and TAIs where the enemy indirect-fire assets are expected to be located. Additionally, radar zones are templated over enemy indirect-fire asset locations, locations of major friendly command and control (C2) nodes, decisive events or objectives (breach sites), or areas where projectiles need to be ignored. Those areas are synchronized with the collection plan and zone management, and consist of two types of zones: priority and censor.

Priority zones consist of critical friendly zones (CFZs), CFFZs, and artillery target intelligence zones (ATIZs). A censor zone is an area in which acquisition must be ignored and placed around friendly indirect-fire systems. A CFZ is an area that has been identified as critical for protection and its loss may jeopardize mission accomplishment. Violation of a CFZ results in a priority 1 fire mission for counterfire. A CFFZ is an area where it has been assessed enemy indirect-fire assets are located. Violation of a CFFZ results in a priority 2 fire mission for counterfire. An ATIZ is an area where an enemy is known to be located and requires confirmation to determine if intelligence is accurate and enemy indirect-fire assets are located within the zone. All three priority zones provide targetable data and intelligence for analysis.

JOINT PERMISSIVE FIRES ENVIRONMENT: FIRE SUPPORT COORDINATION MEASURES



Figure 9-3. Firing rockets to support offensive operations

Coordination measures facilitate planning and efficient execution of operations while providing safeguards for friendly forces. Coordination measures are categorized as airspace coordinating measures (ACMs), FSCMs, maneuver control measures, air reference measures, AD measures, maritime defense measures, and air traffic control (ATC) measures. They exist to deconflict, integrate, and coordinate joint forces.

The brigade aviation officer, air liaison officer (LNO), tactical air control party, intelligence collection manager, operations officer, and FSO play key roles in establishing procedures for integrating the joint airspace and establishing the unit airspace plan (UAP). This starts with a joint fires integration brief focused on establishing a standard operating procedure (SOP) within the airspace. Creating these contracts becomes the baseline to ensuring all elements using the unit airspace are integrated. The UAP is the integrated set of ACMs supporting Army operations.

Fire support coordination and air coordination requires continually coordinating fire support plans and managing joint assets available to a maneuver force. Fire support planning and coordination integrates and synchronizes Army indirect, air and missile defense, joint, and multinational fires with the other Wffs into the commander's concept of operations. Munitions allocation, along with the commander's guidance for joint fires, are an important part of fire-support planning and coordination, which is critical for joint fires effectiveness. Formal coordination binds fire-support resources together in a common effort so the employment of each joint fires asset is synchronized with the commander's intent and concept of operations. Effective coordination during planning and execution is required to ensure suitable weapons systems adequately attack the desired targets at the appropriate time and place. Fire support must operate as a cohesive entity, be responsive to the needs of the supported commander, and be fully integrated into the supported commander's concept of operations. Supported commanders should direct their FSCOORD and chief of fires/brigade FSO to ensure all available means of fire support are fully synchronized with their concept of the operation.

Establishing or changing an FSCM begins when a trigger or condition is met on the battlefield and the operations cell recommends and receives approval for change from the commander or designated representative. FSCMs enhance the expeditious engagement of targets; protect forces, populations, critical infrastructure, and sites of religious or cultural significance; and set the stage for future operations (FUOPS). Commanders position and adjust FSCMs consistent with the operational situation and in consultation with superior, subordinate, supporting, and affected commanders. The operations cell informs coordination elements of the change and effective time. Conditions that dictate FSCM changes are also coordinated with the other agencies and components as appropriate. As conditions are met, the new FSCM effective time can be projected and announced. Following directions to execute FSCM changes, and to ensure all units have disseminated and applied the coordination measures, the current operations (CUOPS) cell will confirm with all liaison elements that it has the current FSCMs. Disseminating the locations and implementing instructions for FSCMs electronically by message, database update, and/or overlay through command and fire support channels, to higher, lower, and adjacent maneuver and supporting units ensures affected units are aware of new FSCM locations and associated positive control measures, thus reducing the risk of fratricide.



Figure 9-4. Providing smoke screen for dismounted infantry

JOINT PERMISSIVE FIRES ENVIRONMENT: ARTILLERY POSITION AREA CONSIDERATIONS

The commander must consider several variables when determining a suitable position area for artillery (PAA). First, PAA planning occurs from the planned target location toward the rear area. Next, a two-thirds arch range from the planned target is drawn on the map. Once staff members plot the two-thirds arch range on the map, they should plan PAAs within the two-thirds range arch to the target area based on the following:

- What is the slope, soil condition, terrain, and traffic ability of the PAA?
 - Does the terrain facilitate movement within the PAA?
 - Is the battery able to conduct survivability moves within the PAA?
- Are there any site-to-crest or intervening crest issues?
- Does the PAA location allow for permissive joint fires into the target area?
- Is establishing frequency modulated (FM) voice and FM digital communications from the PAA to the BN possible?
 - Is establishing communication with or without retransmission teams possible?
- What is the brigade retransmission plan? Where are the brigade retransmission teams located?
- What is the enemy threat?
 - Does the enemy have direct observation on the PAA?
 - Does the PAA use existing terrain features to prevent enemy forces from observation?
 - Does the enemy have any fire finder radars within range of the PAA?
 - Does the PAA avoid high-speed avenues of approach and have more than one entrance and exit?

- Plan for a primary, alternate, and supplementary position.
- How long will the battery use the PAA?
- Is avoiding adjacent unit command posts (CPs), especially the brigade CP and brigade support area (BSA) feasible?
- When is the battery conducting RSOP?
- Can a battery commander provide bottom-up refinement?
- Has the BN S-3 or battery commander conducted adjacent unit coordination?

Additionally, after determining suitable PAAs, the FSCOORD and BN S-3 must share the PAA locations with brigade planners for airspace coordination and adjacent units to ensure maneuver forces do not drive through PAAs during fire missions.

FIRE SUPPORT AND DEFENSIVE CONSIDERATIONS

Field Manual 3-09, *Fire Support and Field Artillery Operations* (30 April 2020), states that during the offense, the brigade should push the FA as far forward as practical.

Field Manual 3-09, *Fire Support and Field Artillery Operations* (30 April 2020), states that during the offense, the brigade should push the FA as far forward as practical. Doing so facilitates the FA BN's ability to range targets and keeps howitzers in place and ready to fire longer as maneuver elements move forward. Commanders must understand if mission requirements dictate if either platoons or entire batteries bound forward to keep pace with the brigade. The FA BN S-3 should pay specific attention to these moves and consider the time allotted to movement versus the number of howitzers required in a particular phase of the operation. Pushing close to the FLOT requires that commanders position assets to enable batteries to complete their field artillery tasks (FATs) while sufficiently synchronizing land use.

Training with doctrinal battery trains and logistics resupply points at home station, as opposed to simple flat rack drops, pays dividends when having to resupply during actual offensive operations.

Field Manual 3-09 also states FA units must consider the positioning of prepackaged ammunition stocks capable of rapid delivery. The composition and location of the combat configuration loads (CCLs) should be of interest to the commander. Training with doctrinal battery trains and logistics resupply points at home station, as opposed to simple flat rack drops, pays dividends when having to resupply during actual offensive operations. Units must define CCLs, at least, in the OPORD. Ideally, the unit has practiced and codified CCLs in the unit tactical standard operating procedures (TACSOP). While supporting a movement to contact, commanders should prioritize long-range munitions to allow the FA BN to keep pace with maneuver forces as it gains contact with the enemy. In an attack, specifically one that contains a combined arms breach, correct CCLs must facilitate the suppress, obscure, secure, reduce, and assault (SOSRA) assessment process.

Positioning of these assets requires synchronization of land use. The FA BN S-3 often completes this synchronization, but responsibility sometimes falls to the battery level, especially as the offense progresses. Battery commanders and platoon leaders must practice adjacent unit coordination so they are comfortable when it is time to maneuver to a PAA, position their trains, or get to a logistics resupply point.

Data informs the commander's priorities when preparing for LSCO. Commanders must include items such as changes to combat slant and shortages in FATs, enabling ammunition within their essential elements of friendly information (EEFIs). Additionally, communicating firing capability changes and establishing wake-up criteria for all key leaders is vital to success in the offense. Above all else, the brigade commander must understand if the FA BN can range the engagement area with the ammunition necessary to achieve desired effects. Subordinate commanders must communicate effectively to enable the brigade commander's understanding.

Many units conduct artillery training and meet the minimum standards on how to fire their howitzers, but do not train on how they would operate against a near-peer threat.

There are numerous ways to improve garrison artillery training to help prepare for LSCO. Many units conduct artillery training and meet the minimum standards on how to fire their howitzers, but do not train on how they would operate against a near-peer threat. The following recommendations can assist with creating combat realism during peacetime training, to include ammunition uploads, convoys, occupations, security, etc. Do not waste a training opportunity while Soldiers are already in the field. Ensure FSC and firing batteries conduct a logistics resupply point operation or resupply, rearm, refuel point (R3P) for every ammunition upload. Firing batteries should occupy (the firing area) with proper dispersion and conduct survivability moves as they would in combat every time they occupy. A field exercise with a single battery occupying only one time is a waste of a training opportunity and instills a false sense of security in Soldiers when facing a near-peer threat. Units should ensure their PACE plan is as robust during training as it will be in operations. Ensure all units' high frequency (HF) radios and joint capabilities release (JCR)/joint battle command platforms (JBCPs) work properly and integrate them into the PACE plan. Practice sending fire missions from sensor to shooter with different communication mediums to train those units and develop their situational awareness and experience when a fire mission is received via an alternate communication method. Lastly, enforce security at all times. Firing batteries need to be trained on defensive operations and how to react to enemy contact. Training should include the use of range cards, defense diagrams, and crew-served weapons positioning and manning; percentage of people on guard; and an overall plan and intent on how to conduct security. Consider all this during training events and squeeze as many training objectives as possible into field exercises to ensure units are thoroughly prepared for LSCO.

FIRE: SPECIAL SUSTAINMENT CONSIDERATIONS

Throughout all phases of LSCO, commanders must clearly state their priorities for sustainment. Although most logistics leaders can deduce intent from their supported unit's mission and end state, a clear understanding of how the FSC directly supports the BN's scheme of fires is often understated, particularly as a function of EEFIs.

Field Manual 3-96, *Brigade Combat Team* (8 October 2015), states the brigade typically positions its BSA one echelon behind the artillery. It is critical for commanders to understand the position and composition of the field trains command post (FTCP)/combat trains command post (CTCP). The composition and positioning of key leaders at the FTCP and CTCP is driven by the time and space in which the offense is conducted. In shaping the commander's priorities for combat trains, staff members must provide the commander with accurate real-time sustainment capabilities and running estimates for commodity consumption at least 24 hours in advance.



Figure 9-5. Airburst smoke round

The need for unforeseen class V drives many unplanned resupply missions. If units do not balance planned resupply missions against unforeseen resupply missions, they risk overburdening the distribution platoon and losing the ability to project combat power through transitions.

Although positioning maintenance and distribution assets forward often reduces repair and delivery times, commanders must strike a balance between enabling rapid replenishment and ensuring planned resupply missions are maximized. The need for unforeseen class V drives many unplanned resupply missions. If units do not balance planned resupply

missions against unforeseen resupply missions, they risk overburdening the distribution platoon and losing the ability to project combat power through transitions. BN staffs must anticipate unplanned targets during the MDMP and plan resupply missions appropriately to ensure distribution platoons have many opportunities to conduct maintenance and recovery.

Army Doctrine Publication (ADP) 3-90, *Offense and Defense* (31 July 2019), states that transition between operations occurs when the commander achieves victory, reaches a culminating point, or receives a change of mission from higher HQ. A culminating point is a loss of momentum driven through a loss of combat power or critical degeneration of classes of supply (whether through exhaustion, a gap in planning, or resupply failure). When transitioning from offense to defense, commanders must prepare orders to address when it occurs, what subordinate units will do, and necessary control measures. The BN's ability to resupply and reorganize combat power simultaneously with other tasks in transition is often challenging, but can be an ideal time for firing batteries to conduct maintenance on equipment in preparation for follow-on missions. Transitions shift emphasis from ensuring a force's ability to move forward (including resupply of petroleum, oils, and lubricants [POL]; forward repair and maintenance; and replacing combat losses) to ensuring its capacity to defend at a chosen location. During transitions, FSCs must shift from drawing and transporting CCLs of class V tailored for the offense to CCLs tailored for the defense.

Within the defense, there is a definitive shift between which supplies the FSC holds and distributes. Commanders must strike a balance between what the unit requires in the defense and what it requires in the offense. This often necessitates a deep understanding of just-in-time (JIT) logistics and comprehension of what triggers exist for replenishment from the FSC to the firing batteries as well as the BSA to the FSC. This becomes a balancing act for the FSC as it strives to maintain 100% on-hand capacity for firing batteries' sustainment loads of class V CCLs in the defense, while requesting and building CCLs of class V for the eventual transition to the offense. Additionally, it is vital for FSCs to continue building combat power in the defense through a robust maintenance plan to conduct scheduled and unscheduled maintenance activities. The flow of POL and Department of the Army (DA) Form 5988-E, *Equipment Maintenance and Inspection Worksheet*, throughout this phase is paramount for a successful transition back to the offense.

CONCLUSION

This chapter provides key lessons learned at every echelon from battery to BCT to effectively prepare and execute LSCO. The FA BN staff and commanders have a large role in maintaining the firing capability to support unified land operations. Identifying friction points prepares units to overcome equipment issues, lack of training on systems, and lack of innovative solutions to maintain a BCT's indirect-firing capability. Leaders and units must analyze their abilities to effectively shoot, move, and communicate. Effective home-station training integrating multiple units at multiple echelons provides the most impactful results. Units will understand their shortcomings as the Army rebuilds itself to support multi-division exercises. Leaders must understand what is necessary to prepare themselves and their respective units for the right fight. How can they structure their training to match up to a near-peer adversary? How can commanders and formations at echelon run through realistic scenarios with forces the size of which they cannot easily or cheaply replicate in a live exercise? Unit cohesiveness and equipment readiness dictate how well formations dominate their adversary at the point of contact.

ENDNOTES

1. Field Manual 3-0, *Operations* (6 October 207), paragraph 2-202
2. Field Manual 3-09, *Fire Support and Field Artillery Operations* (30 April 2020)

SECTION 5

Consolidating Gains in Large-Scale Combat Operations

CHAPTER 10

Consolidation Area Security Considerations

INTRODUCTION

During large-scale combat operations (LSCO), BCTs face significant security, intelligence, and sustainment challenges in what previous doctrine once referred to as the “rear area.”¹ How should a BCT operationally frame this fight? How might a BCT organize its forces in support of this fight? This chapter briefly covers doctrinal foundations for the “BCT rear,” proposes a model for employing the brigade engineer battalion (BEB), and offers best practices for employing a military police (MP) company as an economy-of-force effort in the consolidation area based on recent rotations at the National Training Center (NTC).

DOCTRINAL FRAMEWORK: BRIGADE COMBAT TEAM CONSOLIDATION AREAS

Under current doctrine, a unit’s “rear” always contains a support area where a unit’s support operations occur. If designated by the commander, it may also contain a consolidation area running from the higher headquarters (HQ) boundary to the close-area boundary where “LSCO have ceased” and units “facilitate … security and stability tasks … and support the continuous consolidation of gains.”² Forces operating in the consolidation area free up their sister units and higher HQ to focus on the close-area fight, and so require a “purposefully task-organized combined arms unit to perform area security and stability tasks and employ and clear fires.”³

Can a BCT have a consolidation area? In discussion of the consolidation area, Field Manual 3-0, *Operations* (6 October 2017), refers to corps and divisions, but fails to refer specifically to a BCT consolidation area. The current BCT manual,⁴ published under previous doctrine⁵ uses an older, deep-close-security framework that does not address the issue.

Experience at the NTC suggests a BCT can have a consolidation area. The NTC replicates the largest live-environment battlefield in the Army. Because of the vast distances involved, providing the ability of subordinate formations to focus efforts becomes critical. As often happens in LSCO, rotational training unit BCTs sometimes bypass enemy forces en route to their main objective. BCTs might choose to designate this terrain as part of the close area, assigning bypassed threats to a shaping operation, but this blurs the distinction between the close area, where the decisive operation takes place, and the portion of the BCT AO where the BCT has largely established control. Establishing a consolidation area, as at higher echelons, helps the BCT prioritize its focus on the close fight. It provides a framework for consolidating gains—first with BCT combat power, and then when assumed by the division as rear boundaries shift forward.

... BCTs must set the conditions for the continued consolidation of gains at higher echelons ...

In essence, the time between a BCT finishing the close fight compared with the division or corps commander's decision to formally move the brigade rear boundary, constitutes a period where BCTs must set the conditions for the continued consolidation of gains at higher echelons while simultaneously continuing to engage in close combat.

THE BRIGADE ENGINEER BATTALION IN THE BRIGADE COMBAT TEAM CONSOLIDATION AREA

Field Manual 3-0 describes the division assigning a BCT to its consolidation area. Scaling down, the BCT might assign a combined arms BN, potentially augmented with direct-support artillery. What options exist for the BCT when it needs all of its BNs in the close-area fight, or when the consolidation-area threat is low enough to where a combined arms BN might be better assigned elsewhere?

Doctrinally, the maneuver enhancement brigade (MEB) controls security in the division support area.⁶ That logic could suggest the BEB controls the BCT's support area, but, in practice, we find the BSB is generally capable of securing the BCT's support area. We often see the BEB tasked with securing the "expanded rear," and propose explicitly assigning the BEB to the consolidation-area fight.

The BEB, as organically task-organized, is not able to completely secure the consolidation area because it is not a combined arms entity, lacks the ability to effectively employ and clear fires, and is not purposefully task-organized for the mission. If left in control of its organic route clearance platoon (RCP) and attached available maneuver combat power and/or MP company, however, the BEB can secure line of communications (LOCs) and key terrain, and generate intelligence in the consolidation area.

Most critically, the BEB can provide command guidance and staff synchronization. The BEB commander primarily leads consolidation-area security by issuing planning guidance, emphasizing consolidation-area requirements. The BEB will find that in some phases of BCT operations, planning for engineer operations consumes its staff; designating a command and control (C2) element, ideally an attached maneuver or MP company, or (less optimally) the BEB HQ company, is a successful tactic, technique, and procedure (TTP).

At minimum, the C2 element must be able to control or liaise with all consolidation-area assets. The C2 element must generate command understanding across the consolidation area. It must also generate command understanding of its attached assets, including its capabilities and resource requirements. In this model, integration is the BEB staff's key role in consolidation-area security. The BEB S-2 must work with the BCT S-2 to ensure the BCT's intelligence common operational picture (COP) includes the consolidation area. The BEB may assign assets or use residual collection in the consolidation area. It must also recognize that every friendly convoy moving through the consolidation area represents an opportunity to gain intelligence. BEB staff members should conduct or coordinate intelligence pre- and de-briefs for BEB, BSB, and, when possible, combat sustainment support battalion (CSSB) traffic, and should work with the BSB and CSSB to synchronize protection and security.

BEST PRACTICES: THE MILITARY POLICE COMPANY AS THE CONSOLIDATION AREA COMMAND AND CONTROL ELEMENT AND MANEUVER ELEMENT

An MP company consists of three platoons, totaling nine squads. MP squads can operate independently and task-organize to the team level for some missions. The concept of operations does not necessarily need to align a platoon per pillar. We instead recommend MP platoons organize functionally, particularly once consolidation area operations include a mix of stability and security operations.

1st Platoon (area security) includes traffic control points, integration with RCP, and presence patrols. If additional maneuver platoons are available and consolidation area operations are security oriented, they might work with 1st Platoon under the company HQ.

2nd Platoon includes detainee collection point operations/tactical assembly area (TAA) local security/quick reaction force (QRF). If additional maneuver platoons are available and consolidation area operations are stability oriented, they might work with 2nd Platoon under the company HQ.

3rd Platoon includes intelligence generation in population centers, integrated with attached civil affairs and psychological operations (PSYOP) teams, as available.

Below the BEB staff level, how might the C2 element conduct the consolidation-area fight? As a best practice, the HQ C2 element overseeing the consolidation area should operate on a three-pillar framework, which should first focus efforts on a single security pillar. As close operations advance, consolidation area tasks shift from a security to a stability focus.⁷ At that point, this framework expands focus to include freedom of movement (FOM) and intelligence generation. For our example, we use an attached MP company. **Note:** MPs have doctrinal consolidation-area roles of security and mobility support, police operations, and detention operations.⁸ The following example does not replace them, but expands them into larger consolidation-area operations.

Pillar I: Security. This pillar is foundational and necessary for FOM and generating intelligence. As previously stated, the BEB staff must be involved in establishing and overseeing security priorities for the consolidation area; if the MP company is available, these priorities should be closely coordinated with the BCT provost marshal cell. Securing LOCs and key terrain should be prioritized. MPs can conduct area-security patrols, integrating with other BEB units such as the RCP. Additionally, available combat power such as attached infantry platoons would operate under this pillar.

Pillar II: Freedom of movement. As consolidation-area operations shift toward stability, attached MPs can support area security via route regulation and enforcement, establishing traffic control points. MP companies can then assist the BEB by making recommendations on main supply route (MSR)/ alternate supply route (ASR) improvements and working to ensure routes are properly signed and regulated. Such efforts facilitate the expedited FOM of logistics, casualties, and sustainment. This pillar should also include the secure and efficient direction of internally displaced persons (IDPs) and oversight of the prompt transfer of detainees to the BCT detainee collection point (DCP).

Pillar III: Intelligence generation. In support of the intelligence collection described in the previous section, MPs can collect police information and intelligence for the BCT (see Army Techniques Publication [ATP] 3-39.20, *Police Intelligence Operations* [13 May 2019]). Working with human intelligence (HUMINT) teams, MPs can develop sources within local communities and gather intelligence from individuals held at detainee collection points.

CONCLUSION

Whether or not a BCT employs a consolidation area in its operational framework depends on the commander's visualization and tactical considerations. How a BCT organizes for consolidation operations is critical to ensuring the BCT maintains focus on the close area, and the security elements in the consolidation area have an HQ to oversee their operations and integrate it with the rest of the BCT.

ENDNOTES

1. Outdated Field Manual 71-100, *Division Operations* (28 August 1996)
2. Field Manual 3-0, *Operations* (6 October 2017)
3. ADP 3-0, *Operations* (31 July 2019), paragraph 4-25
4. Field Manual 3-96, *Brigade Combat Team* (8 October 2015)
5. Outdated ADP 3-0, *Unified Land Operations* (10 October 2011)
6. Ibid
7. Field Manual 3-0, *Operations* (6 October 2017)
8. Field Manual 3-39, *Military Police Operations* (9 April 2019)

SECTION 6

Training to Sustain at Pace during Large-Scale Combat Operations



Figure 6-A. Establishing a tactical assembly area

CHAPTER 11

What Commanders Must Consider While Preparing Their Units to Sustain during Large-Scale Combat Operations

INTRODUCTION

Sustainment units arguably have more training opportunities than maneuver units while at home station. In addition to exercises that feature training and practice on the tasks sustainment units need to master to support their brigade combat teams (BCTs), they constantly support other units' training. Maneuver units cycle in and out of collective maneuver training opportunities; sustainers constantly support. For a long time, conducting garrison sustainment operations has been viewed as conducting sustainment training in and of itself.

So, if support units spend all their time training, why do they sometimes struggle to execute their wartime tasks within a contested environment? The answer is because sustainment battalions (BNs) generally operate on two sets of tactics, techniques, and procedures (TTP)—one each for garrison and tactical operations. Unfortunately, the two TTP categories have minimal

overlap. Garrison operations TTP are generally optimized to take advantage of short line of communications (LOCs) and hardstand infrastructure for the sake of efficiency; tactical operations TTP are often less efficient, but train to support in austere, contested environments. Convenience incentivizes garrison TTP; the expected challenges of large-scale combat operations (LSCO) demand tactical TTP.

For commanders to prepare their units to sustain during LSCO, they must set the conditions for their sustainment units to train in garrison, as they will fight in a tactical environment.

For commanders to prepare their units to sustain during LSCO, they must set the conditions for their sustainment units to train in garrison, as they will fight in a tactical environment. Commanders must apply tactical processes and TTP in garrison support operations.

OPERATIONALIZING GARRISON LOGISTICS

In the LSCO tactical environment, successful organizations require their supported units to produce logistics status (LOGSTAT) reports, analyze requirements, execute logistics synchronization (LOGSYNC) meetings that forecast mission requirements up to 96 hours in advance, apply a deliberate planning process at the brigade, BN, and company levels, and determine the best support method for a given scheme of maneuver. In garrison, these same organizations simply require a transportation movement request from the supported unit 24 hours in advance, and then task it out with minimal additional analysis. They keep it simple to complete the job, but the lack of extra effort costs them a training opportunity. Even in garrison, units should execute a deliberate planning process to arrive at an acceptable, feasible, and achievable concept of sustainment, and then execute support using tactical TTP.

If a forward support company (FSC) requires class I rations, bulk water, and fuel in support of its maneuver BN's field exercise, that FSC should not draw directly from its base's subsistence supply management office, bulk water point, and fuel farm. Instead, the FSC should articulate requirements by submitting a LOGSTAT report during routine operations. The support operations officer (SPO) should then take the requirements and resource the support.

During the next BCT LOGSYNC, the BCT S-4 and SPO should complete coordination so the brigade support battalion (BSB) S-3 can build the order. The BSB's distribution company should draw the commodities and deliver them to the FSC via a logistics package (LOGPAC) or at a logistics release point (LRP), even if the LOGPAC or LRP is from one motor pool to another. Additionally, the BN should levy a time constraint against the operation as it would in the field because of constraints presented by the supported scheme of maneuver.



Figure 11-1. Entering the brigade support area

Units cannot execute garrison sustainment along these lines unless installation and division commanders set conditions. For example, it must become an installation-wide business practice that FSCs cannot acquire accounts to draw commodities from various garrison agencies. Forcing functions such as these prevents units from bypassing critical LSCO training out of misplaced incentives.

FIELD TRAINS COMMAND POST

When transitioning from garrison to field operations, maneuver units struggle with developing concepts and intentions for employing their field trains command posts (FTCPs). The first question is where to locate the FTCP. Maneuver doctrine largely suggests field trains should be located in the brigade support area (BSA).¹ Emplacing FTCPs within the BSA increases force protection efficiencies and aids synchronization with the BSB headquarters (HQ). Co-locating the FTCP with the BSA may also allow the FTCP to share communications equipment with the BSA, mitigating maneuver BNs' limited access to upper tactical internet (TI).

Especially in LSCO, where long LOCs and electronic warfare (EW) may deny routine communications, it is critical for the maneuver BN commander to maintain a trusted agent within the BSA to make sustainment decisions for the BN.

Next, commanders need carefully consider and decide who will serve as the FTCP officer in charge (OIC). Especially in LSCO, where long LOCs and electronic warfare (EW) may deny routine communications, it is critical for the maneuver BN commander to maintain a trusted agent within the BSA to make sustainment decisions for the BN. Sustainment doctrine (Field Manual 4-0, *Sustainment Operations* [31 July 2019], and Army Techniques Publication (ATP) 4-90, *Brigade Support Battalion* [18 June 2020]), maneuver BN doctrine (ATP 3-21.20, *Infantry Battalion* [28 December 2017], ATP 3-21.21, *SBCT Infantry Battalion* [18 March 2016], ATP 3-20.96, *Cavalry Squadron* [12 May 2016], ATP 3-09.23, *Field Artillery Cannon Battalion* [24 September 2015], and ATP 3-90.5, *Combined Arms Battalion* [5 February 2016]), and the command post (CP) ATP (ATP 6-0.5, *Command Post Organization and Operations* [1 March 2017]), vary in their recommendations, but all offer a combination of the FSC commander, headquarters and headquarters company (HHC) commander, BN S-4, or one of their representatives to take charge of the FTCP. Ultimately, the decision should not be based on duty position, but instead on personality. Questions commanders should consider when selecting the appropriate FTCP OIC include—

- Who is best suited to understand my intent and tactical situation?
- Who can articulate my sustainment requirements?

- Who can serve as a trusted agent to make sustainment decisions for my BN?
- Who can represent my BN at a BSB LOGSYNC?
- Who can ensure my BN is sustained during BSB planning sessions?

Finally, commanders must determine the composition of their FTCPs. Commanders should not assume this composition is standard across the brigade or even an operation. FTCP compositions should be different for each BN based on their mission, task, and purpose. A field artillery (FA) BN may echelon more distribution assets forward because of the ammunition requirements, while a light infantry BN leaves its assets at the FTCP until needed. Composition may change between phases of an operation. Commanders who want to decrease their logistics tail during a defense may opt to leave additional fuel assets at the FTCP in the BSA. When they transition to an offense, they may call the fuel forward and push surplus class IV construction materials to the rear.

Regardless of the FTCP composition, commanders must set conditions during garrison operations to ensure their units are thoroughly trained for LSCO. They should organize their FSC as they would in a tactical environment with an FTCP and combat trains command post (CTCP). For example, if the BN engages in a field training exercise (FTX), the FTCP should co-locate with the BSB even if it is not establishing a BSA for the operation. Synchronization and coordination meetings between the maneuver BN and BSB should be accomplished as per unit standard operating procedures (SOPs). If an SOP directs the FSC commander to attend the BSB LOGSYNC, the FSC commander should travel tactically from the supported unit's area to the BSB area. Communication between the FSC and BSB should be in accordance with the brigade's logistics communications primary, alternate, contingency, and emergency (PACE) plan.

If LSCO challenges demand units detach FTCPs from the BSA, for example, to avoid a concentration of friendly units and their large electromagnetic (EM) signature, commanders must answer the following questions to ensure the plan's suitability:

- How will I secure my FTCP?
- What communications equipment is necessary for my FTCP to interact with me?

- What communications equipment is necessary for my FTCP to interact with the BSA?
- Do I have enough communications equipment to properly outfit the FTCP as a stand-alone node?

SECURITY OPERATIONS

To simulate security and reporting requirements in a garrison environment, BNs can mandate convoy protection platforms (CPPs) escort LOGPACs and LRPBs across the unit footprint.

To simulate security and reporting requirements in a garrison environment, BNs can mandate convoy protection platforms (CPPs) escort LOGPACs and LRPBs across the unit footprint. They should establish security once they arrive at their link-up positions in accordance with the BCT tactical standard operating procedures (TACSOP). Communications equipment should be installed, operational, and tested within all platforms, further enhancing training and readiness for BN reporting. BNs should assign convoy commanders and assistant convoy commanders so they can rehearse troop leading procedures (TLPs) and mission preparation sequences, culminating in a convoy brief. Operations should end with the convoy commander and assistant convoy commander reporting to the BN S-3, S-2, and SPO to conduct mission closeout reporting, updating all parties on the tasks accomplished, supported units' stockage levels, and the status of routes used during execution.

When making LOC security decisions, commanders must consider the bypass criteria established during the maneuver fight. Even a bypassed squad-sized enemy element in the support area can create difficulties for support units while conducting replenishment operations. BCT commanders must answer the following questions:

- Who is responsible for support area and LOC security?
- Within the BCT, is this tasked to the brigade engineer battalion (BEB)? If so, how will BEB personnel and security shortfalls be mitigated when the BCT transitions into a defense and BEB assets are spread thin conducting engagement-area development?

- Will the BCT task its reserve element with LOC security when the BCT is not committing it to the forward line of own troops (FLOT)?
- Will an entire maneuver element be rotated back to the BEB or BSB to provide rear security?



Figure 11-2. Moving around the brigade support area

TIME, DISTANCE, AND CARRYING CAPACITY

Home-station training areas are not large enough to accurately replicate the vast distances units fight across during LSCO. Similarly, LSCO pace is unlike any feasible training timelines. Commanders must apply critical thinking to understand the demands LSCO present their units. Units might quadruple a BCT's consumption factors from a brigade-level collective training event or combat training center (CTC) rotation to begin to understand their LSCO requirements. If a commander applied this math to their fuel consumption, ammunition expenditures, or even class IV requirements for a wide-area defense, would unit sustainers have the capability to move it all at the speed of operations? The answer is no.

Commanders must prioritize their classes of supplies, and even specific loads, to ensure they have what they need when they need it, and can move it with their organic distribution platforms.

How can this be mitigated? Commanders must prioritize their classes of supplies, and even specific loads, to ensure they have what they need when they need it, and can move it with their organic distribution platforms. The need for external support must be thoroughly understood and requested from echelon above brigade (EAB) units in a timely manner. During LSCO, a BCT may reach back to a sustainment brigade for support, but the sustainment brigade supports an entire division; its assistance is afforded, but perhaps not within the timeline the BCT would prefer. This highlights the need for BCT planners to understand the support they need well in advance of requirements.

The BCT commander may empower the BSB commander to help solve these problems. The implication of the previous paragraph is that for BCTs to be relatively certain they have the right supplies at the right place at the right time, they must move them organically. A BSB commander, however, has a limited amount of movement capacity resident in their base companies. The wealth of distribution capacity is found across the FSCs. Maximizing the BCT's ability to meet movement requirements and priorities requires that the BSB commander has the latitude to re-task-organize all BCT distribution assets, including FSC distribution platoons.

MAINTENANCE



Figure 11-3. A Soldier conducts preventive maintenance checks and services.

Although distribution operations are complex and time consuming, maintenance operations within LSCO also generate significant friction. The daily garrison workload of any maintenance organization is not as extreme as the anticipated workload during LSCO, but still provides training opportunities. Executing tactical maintenance operations with the BSB's maintenance company or the FSC's maintenance platoons can be challenging without participating in a BN- or brigade- level training event. Maintenance units can simulate working in an austere environment by displacing their garrison operations to their local training areas.

When garrison recovery opportunities arise, recovery sections should take advantage of them and treat them as a tactical mission. The recovery crew should go through all steps and procedures as if operating in a tactical operation. The convoy commander should conduct a convoy brief and precombat inspection (PCI) after the subordinate leaders conduct precombat checks (PCC); including radio/joint capabilities release (JCR)/joint battle command platform (JBCP) checks with the BN HQ. This additional training undoubtedly costs immediate efficiency, but provides the recovery team an opportunity to exercise and validate its mission preparation checklist and TLPs. Most importantly, it builds confident and cohesive recovery teams.

Although the aforementioned maintenance TTP can prepare an organization for LSCO at the company level, BCT and BN commanders must set conditions to truly operationalize a unit's command maintenance discipline program. Commanders should ask themselves—

- Are motor stables or “maintenance Mondays” an operation at the brigade level?
- Do maintainers pull out their maintenance support devices and use them or do they sit in a closet with outdated software?
- Do mechanics use special tools on the same regular basis they would in the field or do they rely on the convenience of a motor pool’s maintenance bay?
- Is Tactical Enterprise Logistics Systems (TELSs) gunnery a habitual event on the training calendar to exercise all devices and ensure serviceability?

- Is time allotted to maintain all unit equipment or just reserved for rolling stock and combat platforms?
- How are communications systems checked and maintained?
- Are medics pulled from treatment facilities to maintain their specialty equipment?
- Do units practice maintaining in a distributed manner or under contact?

Units must strike a balance where maintenance nodes move often enough to remain accessible to the supported unit, but static enough to enable maintainers to keep the fleet in the fight.

LSCO keeps maneuver units constantly on the move. Support units need to move similarly to provide support forward and enable the maneuver's operational reach and endurance. However, the commander must answer the following question: When do I want my maintainers to preserve my fleet? The commander's answer dictates how often maintenance collection points and other support nodes displace. Units must strike a balance where maintenance nodes move often enough to remain accessible to the supported unit, but static enough to enable maintainers to keep the fleet in the fight.

Distance presents the same challenges for maintainers as it does for distribution units. Units must prepare for distance challenges when operationalizing their maintenance program. During garrison operations, maintenance meetings are typically conducted in person. In a tactical environment, in-person maintenance meetings remain a best practice; however, LSCO sometimes makes conducting in-person meetings challenging. How do units ensure distributed maintenance meetings remain effective? Without practice at home station, distributed meetings fail to achieve objectives. Training on distributed meetings during garrison operations ensures communications systems are functional and effective, personnel are proficient at sharing and receiving information, and leaders can make decisions.

Commanders accepting risk by requesting sustainment brigade support to move class IX parts so their own organic assets can move sustainment more directly linked to combat power such as class V munitions could slow down maintenance operations.

The speed of operations across vast distances during LSCO requires commanders to make considerations and issue guidance to increase the velocity of maintenance operations. As previously mentioned, BCT organic distribution capacity is limited and commanders must set priorities for what their units move themselves and what they can afford to request support for through EAB units. Class IX repair parts are no exception. Commanders accepting risk by requesting sustainment brigade support to move class IX parts so their own organic assets can move sustainment more directly linked to combat power such as class V munitions could slow down maintenance operations. Or, when LOC security difficulties enable the enemy to interdict a class IX movement, maintenance operations could come to a standstill. Even well above the tactical level, repair part shortfalls and delays within the larger sustainment enterprise, in theater, or on the home front, could have tactical repercussions. Commanders must ask the following questions to increase the velocity of maintenance operations at their level during LSCO:

- What are the standards for controlled exchange?
- What are the standards for cannibalization and who makes the call when parts are not going to be available?
- What shop stock is maintained at the maintenance platoon level to reduce the requirement for trips to the BSA and supply support activity (SSA)?
- When was the last shop stock review conducted?
- How is shop stock stored during garrison operations to replicate tactical operations? Is it on a shelf in the motor pool or always ready to move in a shop van?

MEDICAL SUPPORT

In 2009, the Army medical enterprise began transition to a new medical model in line with civilian best practices. The intent was to provide better Soldier healthcare in garrison. The new Army medical model moved all treatment that exceeded triage from the battalion aid station (BAS) to the installation level, representing a significant second-order effect for maneuver formations.^{2,3} The majority of the brigade support medical company's (BSMC) role 2 medical treatment facility mission supporting a BCT—medical treatment including x-ray, laboratory support, physical therapy, and behavioral health—has permanently moved out of the brigade's home-station footprint. When providers, ancillary personnel, and a portion of the unit's MOS 68Ws (combat medic specialists) are employed elsewhere, how do leaders create and maximize opportunities to practice skills and ensure readiness?

Commanders at the brigade, division, and even installation levels need to relieve their medical personnel from the garrison architecture for certain periods to accomplish the necessary tactical training and prepare for LSCO.

Commanders at the brigade, division, and even installation levels need to relieve their medical personnel from the garrison architecture for certain periods to accomplish the necessary tactical training and prepare for LSCO. Within a BCT, for example, the brigade commander must empower the BSB commander to work with the BSMC commander and garrison medical facilities to balance doctor and medic coverage, and support tactical training exercises. Rigorous, frequent training, and the time to conduct it, allows the BSMC and maneuver BN medical platoons to succeed in tactical environments, including LSCO.

Even with the constraints of garrison operations, units can operationalize their day-to-day home-station activities. Company- or BN- level training creates medical training opportunities that are generally underused. When companies conduct ranges or BNs conduct gunneries, they take their medics and front-line ambulances to the field. When not engaged with a real-world emergency situation, these medics can train with the BSMC's evacuation platoon. For example, the BSMC and maneuver BN medical platoon can practice ambulance exchange point (AXP) operations after minimal coordination with the BSB's medical SPO and brigade medical operations personnel.

Tactical evacuation (TACEVAC) demands a medical common operational picture (MEDCOP), but units often struggle to develop one when transitioning to tactical operations. Developing a MEDCOP requires the BSMC, BSB, and brigade medical operations leaders to seek training repetitions. Establishing, maintaining, and refining a MEDCOP during daily garrison operations is a best practice.

When supporting company and BN training events, medical platoons should practice establishing role 1 treatment facilities while the BSMC practices establishing the role 2. Units should time how long it takes to establish and tear down a facility. For example, units should determine how long it takes to get the role 2 facility ready for initial operational capability (with trauma beds up, patient hold established, and x-ray and lab capabilities operational), and how long it takes to get ready for displacement (including equipment stowed as per approved load plans). Understanding time constraints is an important benchmark for future training and a critical planning factor for future operations (FUOPS).

LSCO presents commanders with medical considerations they cannot replicate during the most heavily resourced tactical training. Mass casualty (MASCAL) events and their unit responses must be thoroughly understood and rehearsed at echelon. Commanders must ask themselves—

- Does the unit understand its medical capabilities and what constitutes a MASCAL event?
- When a MASCAL event happens, what is the response plan?
- If the role 1 is split, where are casualties evacuated?
- Do certain patients stop at company casualty collection points (CCPs)?
- How does the unit incorporate combat lifesavers (CLSs) into the overall plan?
- Who has the decision authority to launch organic aerial medical evacuation (MEDEVAC) aircraft?
- Does the unit identify organic non-MEDEVAC aircraft to provide non-standard aerial casualty evacuation (CASEVAC)?
- Once all MEDEVAC and CASEVAC assets (air and ground) are expended, what EAB medical support and MEDEVAC assets exist in the area to tap into for support?

Answering these questions supports developing a sufficiently detailed plan and creates a baseline of topics to address during training.

The amount of casualties expected in LSCO demands units coordinate CASEVAC and CASEVAC platforms with the overall MEDEVAC plan.

The amount of casualties expected in LSCO demands units coordinate CASEVAC and CASEVAC platforms with the overall MEDEVAC plan. Units should anticipate using MEDEVAC assets to evacuate the highest-priority casualties to the next level of care. Units must identify CASEVAC platforms at the BN level for use when all MEDEVAC assets are expended. These platforms must have dedicated crewmembers who understand the MEDCOP and where to go on the battlefield. These platforms should also have CLS personnel and class VIII medical supplies assigned to provide baseline medical aid while en route to the next level of care. BN command sergeants major (CSMs) and company first sergeants (1SGs) must take ownership of this problem set.

MORTUARY AFFAIRS

The same environmental and threat factors, which increase the challenges of CASEVAC, also increase the BCT's demand to conduct mortuary affairs (MA) operations. MA considerations start at the search for human remains (HR) and do not end until HR are handed off to MA professionals. Significant BCT constraints include MA Manning, which usually consists of a single MA noncommissioned officer (NCO) to help plan operations, and a lack of HR cold-storage capacity within a BCT.

What happens when security considerations inhibit the rearward movement of HR to EAB MA support? Can the division or corps augment the BCT and BSB with a mobile integrated remains collection system (MIRCS) to close this capability gap? Other questions commanders need ask themselves include—

- Do I have search and recovery (S&R) teams identified and trained?
- What experts do I have on my team (beyond my one MA NCO) that can plan an S&R operation?
- How do I execute an S&R operation while also securing my S&R team?

- MEDEVAC and CASEVAC assets cannot move HR. What assets have my units identified that can?
- What allocation do I direct for human remains pouches (HRPs)? One per squad? One per Soldier? One per HRP vehicle?
- What equipment do I need to resource for my S&R teams to be successful?
- How do I integrate my limited MA personnel and my S&R teams into the EAB MA support within my area of operations (AO)?
- Because commanders may be asked or tasked to conduct S&R operations of other nations and services, what coalition partners do I have in or adjacent to my area? Do those cultures have special considerations?

CONCLUSION

Sustainment BNs, particularly BSBs supporting BCTs, become mired in day-to-day tasks that inhibit their ability to conduct tactical training unless commanders place emphasis and priority on it. The commander's commitment to tactical training throughout the conduct of garrison operations begins to set the conditions for sustainment success in LSCO.

Support units must operationalize day-to-day garrison activities to replicate tactical operations, and discontinue the use of garrison-centric mission planning, preparation, and execution. This is a paradigm shift, which begins with buy-in from brigade and division commanders; without this paradigm shift, units struggle through a steep learning curve when initially deployed. In LSCO, we may not be able to afford that struggle; a failure in sustainment becomes our failure in maneuver. This is something we can never abide.

ENDNOTES

1. ATP 3-90.5, *Combined Arms Battalion* (5 February 2016), pg. 7-8; ATP 3-21.21, *SBCT Infantry Battalion* (18 March 2016), pg. 7-6; ATP 3-20.96, *Cavalry Squadron* (12 May 2016) pg. 7-7
2. James Arvantes. "U.S. Military Focuses on Patient Care by Implementing PCMH Model: Medical Home Model Serves as Basis for Moving Care Forward in Armed Services." AAFP News, February 2012
3. ARMY PCMH SCMH Manual. "Leaders Guide to Army Soldier Centered Medical Home Transformation." 13 February 2014, <http://www.usafp.org/wp-content/uploads/2013/12/ARMY-SCMH-Leaders-Guide-FINAL-13Feb-14.pdf>

Glossary

ACRONYMS AND ABBREVIATIONS

AB	attack battalion
ABCs	Army Battle Command System
ABCT	armored brigade combat team
ABTF	aviation battalion task force
ABV	assault breacher vehicle
ACLC	Air Cavalry Leaders Course
ACM	airspace coordinating measure
ACO	airspace control order
AD	air defense
ADA	air defense artillery
ADAM/BAE	air defense airspace management/brigade aviation element
ADP	Army doctrine publication
AFATDS	Advanced Field Artillery Tactical Data System
AHB	assault helicopter battalion
AMC	air mission commander
AMDWS	air and missile defense workstation
AMSO	aviation mission survivability officer
AO	area of operations
AR	Army regulation
ARP	ambulance release point
ASB	aviation support battalion
ASP	alternate supply route
AT	antitank
ATC	air traffic control
ATIZ	artillery target intelligence zone
ATN	Army Training Network
ATP	Army techniques publication
AVCATT	aviation combined arms tactical trainer
AXP	ambulance exchange point
BAS	battalion aid station
BCT	brigade combat team
BDAR	battle damage assessment and repair
BEB	brigade engineer battalion
BFV	Bradley fighting vehicle
BLOS	beyond line-of-sight
BN	battalion

BP	battle position
BSNCOC	Battle Staff NCO Course
BSA	brigade support area
BSB	brigade support battalion
BSMC	brigade support medical company
C2	command and control
CAB	combat aviation brigade
CASEVAC	casualty evacuation
CATS	Combined Arms Training Strategy
CBRN	chemical, biological, radiological, and nuclear
CBRNE	chemical, biological, radiological, nuclear, and explosives
CCL	combat configuration load
CCP	casualty collection point
CD-1	Capability Drop-1
CEMA	cyberspace electromagnetic activities
CFFZ	call for fire zone
CFL	coordinated fire line
CFZ	critical friendly zone
CLS	combat lifesaver
CNR	combat net radio
COA	course of action
COIN	counterinsurgency
COMMEX	communications exercise
COMSEC	communications security
COP	common operational picture
CP	command post
CPOF	command post of the future
CPP	convoy protection platform
CSM	command sergeant major
CSR	controlled supply rate
CSS	combat service support
CSSB	combat sustainment support battalion
CTC	combat training center
CTCP	combat trains command post
CUOPS	current operations
D3A	decide, detect, deliver and assess
DA	Department of the Army
DART	downed aircraft recovery team
DATE	decisive-action training environment
DCGS-A	Distributed Common Ground System—Army

DST	digital sustainment training
EAB	echelons above brigade
EEFI	essential element of friendly information
EM	electromagnetic
EMCON	emission control
EMS	electromagnetic spectrum
ERT	engineer reconnaissance team
EW	electronic warfare
FA	field artillery
FARP	forward arming and refueling point
FAS	forward aid station
FASCAM	family of scatterable mines
FAT	field artillery task
FBCB2	Force XXI Battle Command, brigade and below
FDC	fire direction center
FIST	fire support team
FLE	forward logistics element
FLOT	forward line of own troops
FM	frequency modulated
FOM	freedom of movement
FSC	forward support company
FSCL	fire support coordination line
FSCM	fire support coordination measure
FSCOORD	fire support coordinator
FSE	fire support element
FSNCO	fire support noncommissioned officer
FSO	fire support officer
FSV	fire support vehicle
FTCP	field trains command post
FTX	field training exercise
FUOPS	future operations
GECO	Grey Eagle company
GEOINT	geospatial intelligence
GFC	ground force commander
GMTI	ground moving target indicator
GSAB	general support aviation battalion
HCT	HUMINT collection team
HF	high frequency
HHC	headquarters and headquarters company
HMMWV	high mobility multipurpose wheeled vehicle
HOPE	higher, operational, planning, enemy

HPT	high-payoff target
HPTL	high-payoff target list
HQ	headquarters
HR	human remains
HRP	human remains pouch
HUMINT	human intelligence
HVT	high-value target
IBCT	infantry brigade combat team
IDP	internally displaced person
IED	improvised explosive device
IEWTPT	Intelligence Electronic Warfare Tactical Proficiency Trainer
IFC	integrated fires command
IPB	intelligence preparation of the battlefield
IPE	individual protective equipment
IV	intravenous
IWFF	intelligence warfighting function
ISR	intelligence, surveillance, and reconnaissance
JBCP	joint battle command platform
JCAD	joint chemical agent detector
JCR	joint capabilities release
J-FARP	jump-forward arming and refueling point
JFC	Joint Firepower Course
JIT	just-in-time
JOA	joint operational area
KIA	killed in action
LD	line of departure
LMTV	light medium tactical vehicle
LNO	liaison officer
LOC	line of communications
LOGPAC	logistics package
LOGSTAT	logistics status
LOGSYNC	logistics synchronization
LOS	line of sight
LRAS	Long-Range Advanced Scout Surveillance System
LRP	logistics release point
LSCO	large-scale combat operations
LTIOV	latest time information is of value
MA	mortuary affairs
MANPADS	man-portable air defense system
MAS	main aid station

MASCAL	mass casualty
MCDMG	mission command digital master gunner
MCG	mobile command group
MCIS	mission command information system
MCP	main command post
MCS	mission command system
MDMP	military decision-making process
MDO	multi-domain operations
MDS	multi-mission design series
MEB	maneuver enhancement brigade
MEDCOP	medical common operational picture
MEDEVAC	medical evacuation
MEDO	medical officer
MET	mission-essential task
METL	mission-essential task list
METT-TC	mission, enemy, terrain and weather, troops and support available, time available, civil considerations [mission variables]
MEV	medical evacuation vehicle
MI	military intelligence
MICLIC	mine-clearing line charge
MICO	military intelligence company
MIRCS	mobile integrated remains collection system
MITS	military intelligence training strategy
MOPP	mission-oriented protective posture
MOS	military occupational specialty
MOVINT	movement intelligence
MRE	meal, ready to eat
MSR	main supply route
MTOE	modified table of organization and equipment
MP	military police
NAI	named area of interest
NBC	nuclear, biological, and chemical
NCO	noncommissioned officer
NTC	National Training Center
OC/T	observer coach/trainer
OEC	Operational Environment Center
O&I	operations and intelligence
OIC	officer in charge
OP	observation post
OPFOR	opposing force

OPLAN	operation plan
OPORD	operation order
OSRVT	One System Remote Video Terminal
OTH	over the horizon
PAA	position area for artillery
PACE	primary, alternate, contingency, and emergency
PC	pilot-in-command
PCC	precombat check
PCI	precombat inspection
PLC	probable line of contact
PMCS	preventive maintenance checks and services
POL	petroleum, oil, and lubricants
PSOP	planning standard operating procedure
PSYOP	psychological operations
QRF	quick reaction force
R3P	resupply, rearm, refuel point
RCP	route clearance platoon
RHO	reconnaissance handover
RL	readiness level
ROM	refuel on the move
ROZ	restricted operations zone
RSOP	reconnaissance, selection, and occupation of position
RV	reconnaissance vehicle
RW	rotary-wing
SAS	squadron air station
SBCT	Stryker brigade combat team
S-DMG	signal-digital master gunner
SEAD	suppression of enemy air defense
SERE	survival, evasion, resistance, and escape
SINCGARS	single-channel ground and airborne radio system
SME	subject matter expert
SNE	Soldier network extension
SOP	standard operating procedure
SOSRA	suppress, obscure, secure, reduce, and assault
SPLT	Shadow platoon
SPO	support operations officer
S&R	search and recovery
SSA	supply support activity
STAFFEX	staff exercise
STP	Soldier training publication

STT	satellite transportable terminal
TAА	tactical assembly area
T&EO	training and evaluation outline
TAC	tactical command post
TACEVAC	tactical evacuation
TACSAT	tactical satellite
TAI	target area of interest
TAIS	Tactical Airspace Integration System
TC	training circular
TCN	tactical communications node
TELS	Tactical Enterprise Logistics System
TF	task force
TI	tactical internet
TLP	troop leading procedure
TLWS	target list worksheet
TO	targeting officer
TOC	tactical operations center
TRADOC	U.S. Army Training and Doctrine Command
TRM	tactical road march
TPP	tactics, techniques, and procedures
TWG	targeting working group
UAP	unit airspace plan
UAS	unmanned aircraft system
UAV	unmanned aerial vehicle
UHF	ultrahigh frequency
USAACE	U.S. Army Aviation Center of Excellence
UTP	unit training program
VHF	very high frequency
Wff	warfighting function
WIN-T	Warfighter Information Network–Tactical
WIN-T INC 2	Warfighter Information Network–Tactical Increment-2
XO	executive officer
1SG	first sergeant

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